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President's Address*

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THROUGH your kindness it has fallen to my lot to deliver the Presidential Address in a year which will always be conspicuous in the history of our association, and on a day which is intended to mark its semi-centennial anniversary. To have one's name enrolled amongst the 33 eminent men who have preceded me in this office is indeed an honor which naturally can come only to a few of the fourteen hundred who are numbered in this organization. At such a time our minds are necessarily occupied by thoughts of the past and of the future.

Fifty years ago there assembled in this city, a coterie of loyal members of our profession who founded the United States Veterinary Medical Association. This meeting took place in 1863 in the midst of the disturbing influences coincident with the Civil War, and was attended by a few veterinarians from each of seven states. Josiah Stickney was elected president and Alexander Liautard, secretary. Of this loyal band of pioneers all save Liautard have passed from our activities, while he lives to-day to act as the honorary president on this birthday anniversary. It is given to few men to serve actively as a member of any organization for a period covering half a century, but this unusual experience characterizes the membership of our friend and colleague, Dr. Liautard, to whom we all extend greetings and best wishes on this natal day. The original meeting occurred on June 9th at the Astor House, when the nation was in the throes of civil strife and threatened dismemberment, and the armies of the North and the South were campaigning just prior to the great battle of Gettysburg. Yet in the midst of these frightful disasters, at a time when everything seemed in an irrevocable turmoil, there were found some indomitable veterinarians sufficiently resolute to brave the existing storm, sufficiently clear-sighted to prepare for the future. It was reserved for these men to be the first to conceive in wisdom and establish in strength an association qualified to meet successfully the purpose of the founders and to serve triumphantly as one of the pioneers of veterinary societies. Undeterred by the lack of numbers and unyielding to the clamor of radicalism, it has held fast consistently to a sane equilibrium and has demonstrated its merits by its survival. Remembering those who founded in wisdom and in faith and those who guided in loyalty and zeal, this glad half century of consistent and successful endeavor is looked upon by us all with unstinted admiration. In a short time, thanks to the feverish activity of the corps of practitioners who carried on the youthful association, there grew up a strong sturdy organization. Meager as was the number of veterinarians who became charter members of this association, it doubtless was as great in proportion to the available men as is the greatly increased number of

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colleagues who now avail themselves of the opportunities here presented for securing membership in the leading veterinary association in the world. The growth of this association has been commensurate with the development of the nation. Its members have gone from its portals to take the lead in all movements for the development of veterinary science and its resources; they have been foremost in all actions having for their object the improvement of our profession and the betterment of animal life. And I doubt not that this great association will go steadily and grandly forward keeping step with the onward march of humanity, broadening its work and increasing its usefulness throughout the years that are to come.

The acquirement of knowledge in the domain of animal diseases during the last five decades has been constant and amazing and compares favorably with the progress in other branches of science which has attracted the admiration of the world. As chemistry and physics have advanced from alchemy, and astronomy from astrology, so has veterinary medicine progressed from empiricism and become scientific. The most notable progress that has been made relates to the discovery of the class of infectious diseases and the mode of their conquest. As it is manifestly impossible in the time at my disposal to cover the details of development in all lines of veterinary medicine, it is deemed advisable to confine my remarks to the subject of infectious diseases, the study of which has done most to improve the health of domestic animals and at the same time to place our profession on a plane with the other learned sciences.

Coincident with the organization of the United States Veterinary Medical Association was the birth of our knowledge of pathogenic organisms, since the transmissibility of the anthrax bacillus by inoculation was discovered by Davaine in 1863. Two years later Villemin proved the infectiousness of tuberculosis and transmitted the disease from man to animals, while in 1867 Lister made his brilliant deduction that suppuration and septic processes in wounds were a species of fermentation which could be prevented by the use of germicides. The wonderful results of modern operative surgery have been made possible by the adoption of antiseptic and aseptic methods in the treatment of wounds and in the operating room. One of the most important contributions to the study of infectious diseases was the introduction of the "plating" method with solid culture media by Koch in 1881. Other discoveries which greatly aided the progress of this science were the adoption of the Abbe illuminating apparatus, immersion lenses, and aniline dyes for staining the bacteria.

Beginning with the bacterium of chicken cholera discovered by Pasteur in 1880, a number of pathogenic bacteria were described during the ensuing years in rapid succession. The more important of these were the great discovery of the tubercle bacillus by Koch in 1882, Pasteur's researches on swine erysipelas in the same year, the isolation of the bacillus of glanders by Loeffler & Schutz in 1883, and the discovery of the tetanus bacillus by Nicolaier in 1884. From this date until 1892 few important discoveries were made, most of the work done consisting in the perfection of the methods of investigation. However, the application of the newly-gained knowledge concerning pathogenic bacteria to the prevention and cure of these diseases was begun almost immediately. What a revolution in veterinary thought and practice has resulted can be appreciated only by comparing the text-books of twenty-five years ago with those of the present day. Pasteur working on the theory that resistance to a disease could be produced by causing a mild attack of the affection, was able to produce immunity against a number of diseases of the lower animals. His classic experiments with anthrax vaccine are well known as is also his method of protection against rabies by the use of an attenuated virus. Similarly we take pride in the pioneer work of two of our members, Salmon and Smith, who, in December, 1885, began a series of experiments, the results of which clearly established the principle that the injection of sterilized cultures or dead bacteria confers active immunity to subsequent inoculation with virulent

materials. Here then was the beginning of the foundation upon which rests our present knowledge of vaccine therapy that to-day is attracting so much favorable attention both for preventing and healing disease. The priority of this successful accomplishment was duly recognized by Hueppe in his writings in 1888 although the students of Pasteur made claim to the honor. Their work, however, was not begun until the following March. The general application of this method to therapeutics must be accredited especially to Wright of London.

Another very important principle which is so intimately associated with the names of Salmon, Smith, and Kilborne, was the determination of the cause of Texas fever and the method of its transmission through the agency of the cattle tick. It is of interest to note that this was the first experimental proof furnished on the subject of diseases borne by insects, or diseases that can be carried from one animal to another only by an intermediary host. This mode of transmitting infections has since become quite familiar to the public by the discovery that certain mosquitoes of different species spread malaria and yellow fever to man. Other insects—flies, ticks, lice, and fleas, have been found to carry infectious diseases from one person or animal to another, and the future may show that insects play a most important part in diseases other than those of which we have present knowledge. The discovery of the plasmodia, piroplasmata, and trypanosomes as causes of certain diseases of man and animals was the precursor of the enormous work which has been accomplished in establishing the relationship between various protozoa and diseases of man and animals. In 1903 Novy and McNeil succeeded in growing pathogenic protozoa in pure culture in a manner similar to the cultivation of bacteria. The discoveries of tuberculin in 1890 by Koch, mallein in the same year by Kelning, and tetanus and diphtheria antitoxin in the blood of animals injected with the toxins of these respective bacilli, are additional milestones in the history of veterinary science. The specific etiology of many diseases of animals still remains unknown while others have been only partially elucidated by the discovery of the filterability of their invisible causative agents. The first of these filterable viruses was discovered by Loeffler fifteen years ago in the lymph of cattle affected with foot-and-mouth disease. At the present time fourteen diseases of animals are known that are caused by this class of invisible organisms. One of these is on the verge of visibility—the organism of contagious pleuro-pneumonia. As a rule this class of infections confers a high degree of immunity which is permanent. In some instances as in rinderpost and hog cholera it has been possible to produce an actively immune animal without thereby causing severe disease, by injecting the virus and at the same time the corresponding immune serum. This principle of simultaneous injection of immune serum and virulent blood was evolved by Kolle and Turner for rinderpest in 1898 and by Dorset, McBryde, and Niles for hog cholera in 1905.

It is encouraging to reflect that the progress of bacteriology, like the progress of this association, has been made by gradual and logical steps. The great discoveries, a few of the more important of which have been mentioned, were not lucky accidents but were planned and studied with great patience and deliberation. Their number has ever grown and hence a new branch of knowledge has become available for the prevention of disease. This knowledge is being utilized largely for the diagnosis of communicable maladies, and for the application of measures of protection which previously had been dependent solely upon the clinical symptoms of disease. With the study of methods of conferring the power of resistance to the invasion of pathogenic bacteria, has grown the study of the processes of immunity. Such perfected methods are represented by the specific products which have reduced the dangers from rabies almost to zero, and the liability of tetanus after protective injections to a vanishing point.

New facts and conceptions of absorbing interest in immunity studies have been disclosed in an abundance and with a rapidity

which is simply bewildering. The later developments are so abstruse and complex as to daunt all but the most resolute inquirer. Though we are still hardly beyond the threshold of the problem, the results already attained have compelled us to recast our views as to the very nature of infection and its prevention. Theory after theory has arisen and then has been swept aside, not to disappear utterly, but to be melted in the crucible of research till the refuse was burnt away. In 1884 Metchnikoff first published his famous explanation of immunity by phagocytosis, while it seems but yesterday that the striking researches of von Behring bade fair to explain immunity in terms of antitoxin. Then Ehrlich developed his schematic studies of the "side-chain" theory, which, though brilliant, was only a working hypothesis. But the march of time has shown that they are only a part of the whole truth. In fact the whirlpool into which these theories were leading us has been bridged by the recently developed theory of antiferments that appears to furnish us a more definite foundation for our explanation of immunity. We are still living within the era of its first achievements and therefore we may reasonably hope that this is merely the dawn of its beneficent results.

In proportion to our recognition of the fact that it is through ferments and toxins that bacteria exert their injurious power, the direction of research is changing and chemical examination is taking a large place in pathological inquiry. We now know that even when the actual bacteria have been destroyed by heat, the solutions containing them will produce toxic symptoms on injection in an animal or man. If the quantity is too small to produce serious symptoms it causes a reaction and antibodies are formed which counteract the effect of the living bacteria which are present or that may afterwards gain entrance. This power of producing immunity is now becoming of very great practical service. One finds to a certain extent the same antipower in relation to ferments. The active digestive ferments in the intestinal canal are rendered inactive during their absorption through the intestinal walls.

During the last few years certain objections have been raised to Ehrlich's theory of immunity on the ground that the results obtained by experiments do not harmonize with the suggested hypothesis. Abderhalden has proved by his studies that enzymes or ferments present in the blood play an important part in the economy of the organism, not only from the true physiological standpoint but also from a pathological aspect. He shows that all the processes which are going on in the organism are of a chemical nature, but are governed by certain physical conditions of the body cells and their substrata from which they obtain their nourishment. The chemical changes produced are gradual, not abrupt as usually supposed; and one or more enzymes take up the process of decomposition and synthesis where the other enzymes have ceased to be active. The actual processes noted in these changes are either reduction, oxidation, or hydration. When considered in the light of immunity, it is seen that these chemical changes may be protective or destructive in nature. In this conncetion Abderhalden found that, after introducing certain foreign substances into the blood stream, enzymes were produced which acted specifically towards the foreign bodies. In other words, they destroyed or rendered them nontoxic. This shows a way in which the body protects itself against the invasion of foreign microorganisms. He also proved that under certain physiological conditions, as pregnacy, the blood serum contains substances which are capable of hydrolyzing the proteins of the placenta. Changes of a like character could also be noted in infectious diseases, such as tuberculosis and glanders and also in pernicious anemia of horses, while Rosenthal obtained the reaction in cases of carcinoma, nephritis, and other diseases in man. The methods of noting the changes taking place are two, one which makes use of the polariscope in which the rotation of the serum of the subject when acting on a certain substrate is observed and the other utilizes the process of dialysis. In the latter case the end products produced by the serum when exposed to a certain substrate are detected by a chemical

reagent. These findings are enough to show that a certain equilibrium exists amongst the enzymes present in the organism under normal conditions, and when once this equilibrium is destroyed other enzymes or antienzymes are produced or some of the enzymes present are increased in quantity.

Rothe and Bierbaum have recently published certain far-reaching results in the immunization of cattle with tubercle bacilli which appear to be of considerable importance to the study of immunity in tuberculosis. They aimed to find a method whereby larger amounts of tuberculous antibodies could be produced. For this purpose cattle were injected intravenously with variously treated tubercle bacilli and products thereof. A marked and prompt production of antibodies was noted which usually reached their height on the seventh day to persist into the second month, when a pronounced diminution or even total disappearance would take place. Quite similar results were obtained in the case of horses also. Having established conclusively that anti-tuberculous substances can be produced, the effect of repeated intravenous injections of dead bacilli was tested and the results indicate that a considerable protection against virulent bacilli can be created by this method. Perhaps the most important result of this work so far as immediate availability for practical use is concerned is that by means of the serum of such animals, which is rich in tuberculous antibodies, it may become feasible to test the various tuberculins, of which such a large number are offered for sale, for their actual content in specific derivatives of tubercle bacilli, by means of test-tube methods. We long have needed some easily applied test of this kind in order to exercise some control of commercial tuberculins, and it now seems that this may be possible.

The centre around which both human and veterinary science revolve is comparative pathology. Most of the diseases observed in man affect also domestic animals and their course follows the same law. Comparison between constitutional and organic diseases of man and animals is already a means of widening the circle and adding to science. The work done in the domain of infectious diseases has shown how advantageous and even necessary is the cooperation of the veterinarian and the physician. These infections have been thoroughly studied by competent men belonging to both professions, and one of the principal factors in this union is the honest conservative research work of many prominent representatives of our profession in all countries. In fact the growth of veterinary medicine is intimately connected with the progress of human medicine. Hippocrates, Aristotle, Celsus, and Galien recognized the advantages which could be derived from the comparison of the diseases of men and those of animals. While they practiced human medicine, they dissected animals and from the observations they made, derived a better insight into the diseases of man. It may be correctly said that all that was at that time known of human pathology was taken from animals and applied to man. In the middle ages the epizootics and deaths among animals were ascribed to the influence of the stars, to the punishment of heaven, to sorcery or the Evil One. We can judge of the influence those ideas had on the people by what we see even in our day of such imaginary diseases as "Wolf-in-the-tail" and "Hollow-Horn." Then came the days when philosophical speculations were explained; it was the time of dogmas. Then medicine became separate from surgery and the latter being considered of inferior rank was consigned to the barber shops while veterinary practice was referred to the blacksmiths. This state of affairs continued until the first half of the 19th century. Isolated from other sciences veterinary medicine progressed slowly and contented itself with making sound practitioners. With the development of physical and natural sciences veterinary medicine entered on new paths and important discoveries were made. The erection of veterinary schools was becoming less infrequent and by degrees a profession of skilled veterinarians was established of which to-day we all feel proud.

One can not contemplate the develop-

ment of these veterinary institutions without a feeling of admiration in their achievements and a conviction that the phase of education which they typify is destined to become more and more important in America. The essential basis and foundation of a nation's welfare is to be found in its educational conditions. It is true that those abstract qualities which contribute to national greatness and patriotic citizenship are the offspring of ideals rather than of material things, but these can never come to their fullest fruitage without that substantial foundation afforded by rational and well-balanced educational forces. Humboldt, the German philosopher, has truly declared that "whatever you put into the state, you must first put into the schools," and it is equally true that the standing of the veterinary profession is dependent on the strength of its schools.

No one factor has been more successful in elevating the standard of veterinary institutions in America than the investigation of their curricula and equipment by the Bureau of Animal Industry in conjunction with the U. S. Civil Service Commission. While the primary object of such supervision was to make it possible for the Government to obtain men better educated and better qualified for its veterinary work, it nevertheless succeeded in raising the standard of veterinary education in the United States and enabled the students to obtain greater and better facilities for study. These schools have made large expenditures of money and have greatly augmented and improved their facilities. The Government had previously taken an active part in helping to improve veterinary education. When in 1894 the veterinary inspectors of the Bureau were placed in the classified service, it was necessary for applicants to be graduates of veterinary colleges. In 1899 a step in advance was taken when it was demanded that the graduates should be from a college having a course of not less than 3 years. Six months later this was changed to refer to graduates after 1897 while those before this date were eligible if from a 2-year college. In 1903 a further stipulation was made to the effect that graduates from a college having a 3-year course must have spent at least 2 years in the study of veterinary science. This prevented the colleges from giving two years' credit to students from agricultural, medical, dental, and other colleges.

This association likewise has been an aggressive factor in improving educational facilitiesin our colleges. Prior to January 1, 1893, it was possible for graduates of 2-year schools to become members of this association, but at that time the barrier was placed so that it was necessary for applicants to have graduated from a 3-year school, having at least four veterinarians on the faculty. However the 2-year graduates of any school which adopted the 3-year course could qualify provided they had been five years in actual practice. During the last two years the association has had a committee on veterinary colleges at work inspecting and investigating the matriculation and course of studies in these veterinary colleges with an appropriation for expenses, and the results have well repaid the time and money expended. The various committees on Intelligence and Education have likewise given this subject faithful consideration, but systematic visitations of the schools were never undertaken. Another potent agency in the advance of veterinaray teaching may be found in the establishment of the State Boards of Veterinary Examiners. These boards, which have been created in almost all the states, have set standards which have forced the colleges to meet them. The entrance examination now required by our schools is another factor in improving veterinary education by securing a better class of students who are more able to comprehend the various studies in the course.

Veterinary science will always be subject to reversals. Its progress has been and always will be a series of advances and retrogressions with the outposts of knowledge steadily advancing. All this but emphasizes the supreme importance of organizing inquiry on a thorough-going basis, coupled with a judicious conservatism in the formulation of conclusions. The broader and more tributary the field over which the collection of details is extended, the more

certain is the scientific worth of the results obtained.

A lack of training in the fundamental principles is evidenced in the results from time to time reported of research work or investigations, as pursued by observers thus disqualified for the task which they have undertaken. Eternal warfare between truth and error is a record of the conflicts between knowledge and ignorance—conflicts that are oftentimes intensified by the inclusion of the personal element, leading to conditions that further complicate the problem and overshadow the main issue until all recognition of its importance is lost. But there is an important mitigating factor affecting the case of the man who, with the courage of his ignorance vehemently asserts that he knows. This factor is the honesty of his belief in the evidence of what he calls his own experience and his faith that what he himself has experienced can not be wrong. It is, however, just that kind of faith that is earliest destroyed by systematic training in precise methods of scientific observations and reasoning. Research, so-called, has been carried to an absurd excess by men who have ventured alone into the scientific jungles with the hope of finding something, but without definite aim or fundamental knowledge or landmarks. It would seem advisable that no apparent discovery, made by a man who has not established a scientific status, should be accepted as such without a trial by a commission composed of scientists of established reputation.

It is quite generally conceded that the value of scientific discoveries and deductions is dependent upon their authorship. When new results are brought to our attention, the first inquiry is for the name of the author and several factors enter into our judgment of his work. These are (1) his personal equipment; (2) his motive; and (3) his environment. The primary consideration is the man. Unripe minds will naturally produce pseudo science and much so-called science is being forced upon our attention to-day that is unripe, undigested. The personal side of research must begin with the proper training and preparation to conduct research that is worthy of the name and until we find the man fitted for this work, such accessories as money, equipment, apparatus, etc., can not be efficiently applied. As an illustration of my theme that great things have been accomplished in the smallest quarters with primitive facilities, it may be interesting to know that the best research work accomplished by Prof. Ostertag, was in a reconstructed hot house, while Theobold Smith's renowned work on Texas fever, was carried on in a poorly equipped garret of a four-story building. The goddess of science donates her treasures mostly to those who desire them for their own sake, and not for the sake of the riches they may bring. In these days of money-making invention we need a renaissance of the spirit which inspired and upheld the fathers of our profession in their strenuous labors both scientific and practical, that have laid the foundations of modern veterinary medicine.

Professionally, we guard the greatest income producing property in both the United States and Canada. Few appreciate the vast investment which we have in these countries in domesticated animals. There are, I believe, not less than five billions of dollars invested in the various kinds of domesticated animals in the United States, and on every side this vast investment is threatened by pestilence and disease. In fact, Government statistics will show that the loss of farm animals last year in this country alone comprised over 6 1-2 million swine, nearly 2 million cattle, over 2 1-2 million sheep, and more than half a million horses and mules—the total value exceeding two hundred millions of dollars. And it is the universal opinion of competent men who make a study of this subject that a large proportion of this loss can be eliminated by judicious sanitary measures. The greatest mortality is among swine. Something like nine-tenths of that is due to hog cholera; and cholera, though not absolutely preventable at present, can be very greatly reduced by judicious application of serum, together with proper sanitary control. The improvement and the protection of such interests as these are worthy of the most earnest consideration

of both statesmen and scientists. This association is working not only for the alleviation of the suffering and loss of domesticated animals, but also for the protection of the public health. We have in view both of these problems, and there are many diseases which we are investigating and endeavoring to control, the suppression of which will mean as much to the human race as it does to dumb creation, for which we are the especial guardians. Until recently our meat supply was ample with some to spare. Only six years ago we exported from the United States half a million cattle, and over four hundred million pounds of beef. Now exports have almost ceased, principally because of the home demand. We have only 23 cattle to the square mile, while Belgium has 164 and Denmark 144. However, any such intensive scheme of beef production is bound to be more expensive than the former methods of raising cattle on the vast grasslands of the open range. But some compensation may be had by saving even a part of the yearly preventable waste of food animals and thereby reducing the problem of high prices, for the consumer finally pays for the loss of animals that perish from disease, as well as for the healthy animals which are used for food.

A review of American veterinary progress would not be complete without some mention of the achievements of two Government Bureaus that are under veterinary direction and the activities of which are largely in the domain of veterinary science—the Canadian Health of Animals Branch and the United States Bureau of Animal Industry. In the relatively short periods of their existence these organizations have made a remarkable record, both in scientific research and in the administrative application of scientific knowledge and have thus thrown luster on the veterinary profession.

Veterinarians have always constituted a large proportion of the force of their employees, and at present in the Bureau of Animal Industry alone, they number 993.

If the scientific staff of the Bureau of Animal Industry had never done anything more than to make the classic discovery of the mode of transmission of Texas fever by the cattle tick, the Bureau's existence would have been amply worth while. This discovery established a new principle in medical science, the extent of the application of which the world is only beginning to realize as we learn to conquer in turn such maladies as yellow fever, malaria, and sleeping sickness. It has made possible such triumphs of sanitary science as have been accomplished on the Isthmus of Panama, and without which the great canal could not have been constructed so expeditiously and with so little loss of human life.

In the prevention and eradication of animal diseases the Bureau has been of the greatest economic service. On several occasions it has saved the live-stock industry of the country from disaster and ruin. The immediate cause of the organization of the Bureau was the presence of contagious pleuro-pneumonia of cattle, which had been introduced in some way from abroad and becoming established in the Eastern states had spread as far west as Illinois. It was only after several years of effort that this insidious and stubborn disease was completely stamped out, and it has not since reappeared.

Twice the Bureau has had to deal with outbreaks of foot-and-mouth disease, first in New England, and later in some of the Eastern and Middle Western states. Each time the disease was conquered after prompt and vigorous work by a well organized force of trained veterinarians and assistants. Even when we consider the experience of European countries that have struggled in vain for many years to get rid of this malady, it is difficult for us to appreciate the value of the work which prevented this infection from becoming established in this country, and from spreading to the great stock-raising regions of the west. In studying the origin of thelatest outbreak, it was found that the infection was due to contaminated imported vaccine virus, and an interesting case of symbiosis of vaccinia and foot-and-mouth disease was discovered and demonstrated.

For many years the presence of cattle ticks and the infection of Texas fever have made it necessary to maintain a quarantine

on cattle in a large area in the southern part of the United States. The movement of these cattle to northern markets has been permitted only under restrictions which entailed expense and lowered prices. The disease was a great disadvantage to the infected region and prevented the development of cattle raising there. The losses and damage have been variously estimated at from $40,000,000 to $200,000,000 a year. Applying the knowledge gained as to the nature of the disease, the life history and habits of the ticks and methods for their destruction, the Bureau with local help has during the past seven years waged a highly successful warfare of extermination against the ticks. The territory freed of infection in this time now amounts to nearly 200,000 square miles and almost equals in extent the combined areas of Tennessee, Georgia, Alabama, and Mississippi. More then one-fourth of the territory originally infected has now been cleared, and we may look forward to the time when a great section of our country, naturally suited to cattle raising, will do its part toward supplying beef to feed our growing population.

Armed with an effective weapon against hog cholera in the preventive serum already mentioned, the Bureau has given battle to this disease, which for so many years has wrought havoc to the hog raiser. Systematic work has been started and with the experience of previous conquests it is not too much to hope that in time this work will also meet with success.

In tuberculosis we have the greatest problem that confronts veterinary officials. In the research work leading up to our present knowledge of this plague of animals and man, the veterinary profession has had a most creditable part, and the Bureau of Animal Industry has made valuable contributions to this knowledge. The task before us is to adopt administrative means which will repress and if possible eventually eradicate this disease from our domestic animals. The successful control of cattle mange, sheep scab, dourine, and other infections are examples of similar veterinary achievements.

The United States Meat Inspection service constitutes the largest piece of veterinary administrative work in the world. Inspection is maintained at 786 establishments in 222 cities and towns, requiring the services of about 2,500 employees, including a large proportion of veterinarians, who make all final decisions on postmortem. A high standard of efficiency obtains and the results compare favorably with the service in other countries. It is interesting to note that in the attacks of 1906, no fault was found in any case with the veterinary work.

Taken as a whole the large number of employees constituting the great administrative body of the Bureau of Animal Industry are a conscientious and efficient force of men who deserve well of both the profession and the public, whose welfare they canstantly guard. In their loyalty to the former they are necessarily loyal to the latter for their interests are inseparable.

By research and educational propaganda the Bureau has been a strong element in the general improvemtnt in milk. The adoption of the score-card system of inspection and the advocation of pasteurization at 145° for 30 minutes, which does not injure the nutritive or digestive qualities of the milk, have been important factors in milk sanitation.

In these and many other ways the Bureau has given the world valuable scientific knowledge, has benefitted humanity, protected health, performed economic service to stock-raising interests and reflected credit on the veterinary profession.

The increasing use of sera and vaccines in veterinary practice has made it desirable to obtain Federal and state legislation in order to supervise the preparation of such products. Biological remedies have an important place in the field of sanitary medicine and this field is constantly becoming larger and more important. Some of these products, however, have been found to be frauds and a menace to the live-stock industry. It is, therefore, with much pleasure that I report the recent passage of bills regulating the sale of these products by the states of Alabama, Georgia, Pennsylvania, and by the Congress of the United States. In Europe these products are prepared by

private firms under state control as in Germany, or they are manufactured by the Government itself as in Holland. In the latter instance legislative measures are unnecessary.

That there is a promising future for this most recent branch of therapeutics may be frankly admitted, but there is a risk of allowing enthusiasm to outrun discretion in the claims which the advocates of these products urge in their favor.

It has been stated that the veterinarian of the future will be an immunologist. We all agree in hoping that it may be in his power to afford immunity to his patients from as many diseases as possible. But I submit that he must continue to be in the future as he has been in the past, above all things a man of wide clinical experience. No matter how great the advance of science may be in the future there never will be a royal road to veterinary medicine. It will be the common road that all must tread who aspire to treat disease, and after the classroom has been left behind it will be through the stable, the farm, or the ranch, the postmortem field, and the clinical laboratory, and will always lead back to the side of the diseased animal.

During the past year the spirit of our members and the energetic team work of the officers and committees of the association were highly commendable, and I wish to express my sincere appreciation of their valued services. I can not refrain from mentioning especially the aid I received from our painstaking secretary and the indefatigable labors of the chairman of the Legislative and Publication committees. I have kept in close touch with the activities of the various committees, and I trust that their recommendations will be given careful consideration by the Executive Committee. The assignment of certain lines of work and investigation to special committees is an admirable arrangement and I hope that this method of apportioning the problems of the association will be even further extended in the future. I do not deem it necessary to make any specific recommendations at this time as I am satisfied that you will give your earnest consideration to all matters which will be brought before you during the meeting, and in passing judgment on the different aspects of the subject you will always be guided by motives which will be for the benefit of our association and the welfare of our profession.

I fain would speak of many other matters, but I have been warned not to trespass on your patience by speaking at too great length, and the warning is full of wisdom. However, before closing my address it is fitting that I should pause, if only for a moment, to call to mind with affection and reverence those great men who honored and delighted this association for years and who have conferred such high distinction upon the position of the veterinarian. I refer to men like Stickney, Michener, Large, Miller, the Rayner Brothers, Andrew Smith, Huidekoper, Clement, Roscoe Bell, Pearson, Harger, Dougherty, and many others. With what amazing industry, versatility and keenness of intellect did they unfalteringly cultivate the field of veterinary science! With what devotion and beneficial results did they give their time and abundant knowledge to the service of the public and of our profession! To-day we mourn their loss but rejoice in the rich fruitage of their past friendship.

From the history of veterinary medicine let veterinarians draw confidence in the invincible strength of their science which though at one time despised even by the well-informed, has during the last five decades attained such great importance and such wide influence in the life of this and other countries. And let them take fresh courage and make new resolutions to rival all the other professions in useful work to be accomplished in the 50 years to come. Let them also remember with gratitude and veneration those not of our profession who supervising veterinary sanitation, early recognized the value of such control work and aided in its organization.

To-day far reaching questions of great importance are agitating the association. Whatever the outcome, let us hope that this, the greatest association the members of our profession have ever seen, may in no measure depart from the high traditions it has ever set before it, but rather increase

its usefulness to the profession, and to the public.

Gentlemen, I have no fear for the future of veterinary medicine. I have an equally confident belief that in the times to come those who practice it will be held in increasing honor, and of him who is faithful in its high traditions it will be said, "Many shall commend his understanding."

An Improved Method of Mounting Museum Specimens*

By ENOS DAY, V. S., Chicago, Illinois

Veterinary Inspector in Charge of Branch Pathological Laboratory, Bureau of Animal Industry.

FROM the time that pathology was established as a science, teachers and workers in this branch of medical science have endeavored to preserve the tissue so that the pathological changes could be demonstrated in the gross specimen. In order that the specimen may be of greatest value, the color, as well as the structure, should be preserved, as much depends upon the color in demonstrating microscopical pathological changes. The method which preserves the color best without destroying the structure of the tissue is the one desired.

Alcohol of various strengths is probably the oldest substance used in preserving museum specimens. Its use, however, has the great disadvantage of not only shrinking the tissue but rapidly destroys the color. Some years ago we weleomed with delight the statement that formalin would meet our requirements as a preservative for museum specimens. The results, as we all well know, did not meet with our wishes. While it is true that it prevents decomposition even in quite dilute solutions, it does not preserve the color and causes some shrinking and renders the tissues quite brittle, when used alone. It has, however, the advantage of being much cheaper than alcohol.

It was not until Prof. Kaiserling published his method of preserving museum specimens that we were able to preserve the original color in pathological or normal tissues for any length of time. At the present time, I know of no method which preserves the color and structure better than this one. Since this method was first published, a number of modifications have been recommended, but none of them have proven to be any special improvement over the original formula.

The Kaiserling method, however, has the disadvantage of being bulky, the specimens having to be placed in glass jars of various sizes which are unwieldly and awkward to handle, especially in class rooms, and occupy a great deal of space in the museum. Furthermore as the specimens become old, or if exposed to the light, they soon lose their bright color. Various molds often grow in the final preserving fluid and destroy the specimen in that way. If one wishes to ship them elsewhere for exhibition purposes there is always the great danger of breaking.

In order to overcome these objections several workers have mounted museum specimens in "Kaiserling jelly" in Petridishes cemented to plate glass squares, the "Kaiserling jelly" being made by adding from ten to eighteen percent of the best grade gelatin to the Kaiserling preserving fluid which will be referred to later.

The pioneer and probably the most successful workers with this method in this country are Watters [1]; Coplin [2]; Albert [3]; Watters [4]. Specimens mounted in this manner are easy to handle, stand shipping well and occupy but little space. They have the disadvantage, however, that the gelatin is not clear, becomes darker with age, and is liable to shrink either from the glass or the specimen. This, of course, detracts very materially from the appearance of the specimen.

*Presented at the 50th annual meeting of the A. V. M. A., New York, September, 1913.

About fifteen or twenty years ago a method for mounting museum specimens in Kaiserling's fluid between watch glasses and plain glass squares was perfected in Germany. This method has been kept a profound secret by those who originated it. These preparations are bound in a card-board frame covered with book-cloth, and are very neat in appearance and very durable. Several years ago the writer had the pleasure of examining some of the German specimens and also some that had been prepared in Kaiserling jelly, and was at once impressed with the beautiful appearance of the former as they contained no air bubbles and the fluid was clear and colorless, also that the card-board case protected the glass back ground from being soiled when handled. I at once began experimenting in various ways to prepare mounts in Kaiserling fluid as it appeared to me that it was much superior to any of the various other fluids. After many attempts, I succeeded in mounting specimens under watch glasses in Kaiserling fluid. These mounts retain their color and show relations well, are convenient to handle occupy very little space, and are permanent. The greatest difficulty experienced was to find an adhesive substance that would seal the watch glass to the glass square which possessed sufficient elasticity to compensate for the expansion of the fluid during extreme changes of temperature without cracking and allowing some of the fluid to escape. Asphaltum with a melting point at about 230° F. was found to meet the above requirements. I have placed mounts cemented with this substance in an incubator at a temperature of 104° F. for forty-eight hours and then exposed the same mounts to a temperature as low as 5° F. below the freezing point for twelve hours without any undesirable effects.

The method which I have adopted is as follows: The tissues selected for museum mounts are washed lightly in water to remove any blood or foreign matter that may adhere to them. If the specimen is a thick mass it is cut in slices about an inch in thickness and placed in Kaiserling's fluid No. 1 until fixed through, which requires from one to several days depending upon the bulk of the tissue and the amount of fluid used. It is best to use plenty of fluid. Care should be taken to place the specimen in the position that it is to assume when mounted. If this is neglected it is liable to become wrinkled and curled and can never be made to look well afterwards. If it is desired to mount thin membranes, such as pleura, messentery, peritoneum, and so on, they should be stretched over glass frames before fixing in order to prevent curling. Either glass or glazed earthern ware jars should be used for fixing containers, as metal is liable to cause straining. As soon as the tissues are fixed through they are washed in running water for fifteen or twenty minutes to remove as much of the formalin as possible from the surface. They are then trimmed down to the desired size and shape to fit into the watch glass, and placed in sixty percent alcohol until the color begins to return, then they are placed in ninety-five percent alcohol until the color is fully restored This step must be watched closely for if they remain too long in alcohol they fade again. As soon as the color is properly restored they are placed in Kaiserling's preserving fluid for a day or two and then mounted. It is always desirable to mount the specimens within a few days after fixing in order to get the best results. Before mounting, the tissues are exposed to a negative pressure of about twenty-six mms. of mercury for from one-half hour to an hour and a half to remove all of the alcohol. If this is not done the alcohol which remains in the tissues produces fading.

Before using the watch glasses it is necessary to grind them perfectly level. This is done by sprinkling fine carborundum powder on a large piece of plate glass and then pouring a sufficient quantity of water on the powder to make it grind well. The grinding should be continued until the ground surface nearly equals the thickness of the glass. Watch glasses 6 inches in diameter are a very good size but larger or smaller ones may be used depending on the size of the specimen one wishes to mount. The glass squares should be made of plate glass three thirty-seconds of an inch thick and seven and seven-eighths

inches square for the six-inch watch glasses. The size of the square glasses should vary in proportion to the size of the watch glass if larger or smaller ones are used. Plate glass squares thicker than one-fourth of an inch are undesirable even for very large specimens requiring watch glasses seven and one-half inches in diameter.

After the glasses are thoroughly cleaned, the specimen to be mounted is placed in the watch glass and covered with a glass square allowing the watch glass to protrude far enough to form a lip. The fluid (Kaiserling fluid) is poured in at this opening until it runs over then the watch glass is slipped towards the center sufficiently to close the opening and then set aside in a perpendicular plane to allow the air bubbles if present to rise and then the process is repeated until no more bubbles rise then moved to the center. If a number of mounts are to be made the specimen and glasses may be immersed in a large quantity of fluid and put in place and taken out and set aside as before. If the watch glasses have been properly ground the glasses adhere so perfectly that the fluid does not escape. After all the bubbles have been removed the mount is placed on a flat surface with the watch glass upwards and all moisture and greasy substances are carefully removed, then melted asphaltum which has been heated to about 250° F. is poured around the joint between the two glasses. The amount of asphaltum should be liberal and should extend about one-half inch upon the watch glass and an equal distance on the plate glass. After the asphaltum has become cool and set it can be trimmed with a knife and the surface smoothed down with a thick-bladed knife or other metal which has been heated to nearly a red heat. After the melted surface has again become cool the mounts are set aside for a few days to determine if they have been perfectly prepared. If bubbles appear the specimen should be remounted which is not a difficult task. The greater portion of asphaltum can be removed with a knife and the remainder with xylol or gasoline as it is very soluble in either of these fluids. If the specimen has remained perfect it can now be enclosed in the cardboard mounting. When seven and seven-eighths inch glass squares and six-inch watch glasses are used the card boards should be eight inches square with a circular opening five and three-eighths inches in diameter in the center. They should be about one-sixteenth of an inch thick and of good quality. The upper board should be covered on the top side with bookbinder's cloth and on the under side it should have a piece of cardboard of the same size and thickness with a circular opening seven inches in diameter glued to it, thus allowing space for the asphaltum. The cloth should extend about an inch on all sides allowing sufficient material to paste to the ends and under side. The lower board should be just eight inches square with an opening the same size as the upper and covered with cloth in the same manner only that the cloth does not project over the ends. A good quality of glue should be used to fasten the top and bottom cardboard securely to the glass and also for holding the cloth over the ends and to the bottom board.

The formulae for Kaiserling's fluids are as follows:

No. 1, Kaiserling's Fixing Fluid:

Nitrate of Potash	gms. 1000
Nitrate of potash	Gms. 15
Acetate of potash	Gms. 30
Formalin	Cc. 200
Water	Cc. 1000

(Alcohol as stated before to restore the color.)

No. 2, Kaiserling's Preserving Fluid:

Acetate of potash	Gms. 100
Glycerin	Gms. 200
Water	Cc. 1000

The preserving fluid should be boiled for five or six minutes before using and allowed to cool to about 80 ° F. This answers the double purpose of destroying mould spores and of driving off the most of the absorbed and imprisoned air in the fluid, thereby lessening the danger of bubble formation and subsequent growths of molds.

REFERENCE

1. Watters, *New York Medical Journal;* August 23 1902; Vol. 76; p. 318.
2. Coplin, *Journal of the American Medical Association;* August 13, 1904; Vol. 43; p. 441.
3. Albert, *Journal of the American Medical Association;* June 30, 1906; Vol. 46; p. 1993
4. Watters, *Medical Record;* December 22, 1906; Vol. 70; p. 988.

Mammitis or Mastitis in Cows

By GEORGE LOCKWOOD, M. R. C. V. S., Peterborough, England

I PURPOSE at the outset to just refresh our memories by a very short description of the anatomy of the bovine mammary gland. This structure consists of parenchymatous tissue and stroma, the formation of the former being partly alveolar and partly tubular. In the connective tissue of the stroma there are variously shaped spaces lined by a membrane similar to the alveoli of the lung in the smaller bronchi, and these open into gland ducts; both these are lined by low cylindrical epithelium and together form the milk secreting tissue. The milk flows out of these into the milk ducts to pass into a large cavity at the base of the teat, termed the galactophrous sinus. The ruminant's udder possesses only one galactophorous sinus and teat for each quarter, in the mare's udder each teat is supplied by two sinuses. From the galactophorous sinus a narrow canal, lined with mucous membrane, leads to the outer air. The stroma consists of connective tissues and elastic fibres, which form a capsule under the skin and surround the udder. From this capsule the stroma is continued inward into the gland, filling the space between the alveoli and ducts of the gland, and is analogous to the interstitial connective tissue of the lungs. The quantity of stroma varies considerably. During lactation it diminishes and in its place alveoli develop. In the udder of young animals connective tissue predominates; between the larger div sions of the gland and their ducts lie considerable masses of connective tissue, which often contain elastic fibres and fat. A double system of lymph vessels exists in the udder. The one lying near the surface arises from the capsule and is connected with the lymph vessels of the skin, the other invests the alveoli, which are surrounded by five lymph vessels. Fürstenburg was the original observer to distinguish these two systems of lymph vessels. He also noticed that during lactation the lymph vesse's appear to be distended with lymph. The alveoli are directly surrounded by lymph capillaries, which in their turn are surrounded by capillary blood vessels, these lie partly on the lymph spaces, into which they pour fluid contents and leucocytes, especially during lactation. The white blood corpuscles are believed to pass from here even into the alveoli of the gland. This intimate relationship between the alveoli and the blood and lymph vessels is of the greatest importance in studying the development of disease of the udder. The skin covering the udder shows no special peculiarity, it has few hairs, but on the other hand it has in places well developed sebaceous glands and large papillary bodies. In cattle the skin of the teats is free from glands and has no hair.

Acute Mammitis—Its Pathology and Varieties

Although acute inflammation of the udder is not essentially different from inflammation in other parts of the body, yet it exhibits certain peculiarities, which are favored by particularly injurious influences. The milk secreting cavities and milk ducts being lined with mucous membrane and communicating directly with the outer air, their diseases closely resemble those of the respiratory and digestive tract. During lactation acute inflammation of the udder is most common, but at other times isolated cases are seen, and under very rare circumstances inflammation of the udder has been noticed in virgin cows. One authority (Guillebeau) says that cows most frequently suffer from mastitis between the fifth and sixth year. The physiological activity of the milk glands in many respects favor the development of inflammation. The early processes of lactation, particularly the congestive stage, so closely resembles acute inflammation, even in their outward manifestation, that it is difficult to draw a sharp line between the two. Both the vascularity of the gland and the processes nec-

essary for the development of secretory activity clearly favor the appearance of disturbances which readily take on an acute inflammatory character, it is therefore very natural that most diseases of this kind occur during the years of parturition. The anatomical formation also favors acute inflammation. The milk forms an excellent medium for the cultivation of bacteria, to which the ducts offer an easy point of entrance. Finally the position of the udder is exceedingly favorable to the entrance of infectious material, and as injuries to the skin of the udder, and especially to the teats, are frequent in cows, they easily form the point of origin for infectious inflammation.

Causes. These may be divided into mechanical, chemical, thermal, and specific. In cattle the first takes the form of horn thrush and similar injuries; large udders may be trodden on by other animals or by the cow herself when rising. Chemical or thermal irritants are much less frequent, though the milk may undergo change in the udder, irritant substances form and produce acute mastitis. Our knowledge of such conditions, however, is still very limited. Frost bite seldom attacks more than the skin, though it is possible the udder may sometimes catch cold. As we find in other mucous membranes that inflammatory processes are often caused by chills, it may possibly be the case in the udder also. More important than any of these are the specific irritants. After Franck had directed attention to the point, Kitt, Bang, Nocard, and others commenced investigations and described different bacteria as the cause of inflammatory processes in the udder. Infection of the udder may occur by those paths.

The skin: in which, as already remarked, slight injuries often occur, may form the starting point of infection. We see, therefore, why cows are more frequently affected with disease of this character than mares—their teats are injured during milking and infected at the same time. Disease once produced spreads, especially in the course of the superficial lymph vessels of the udder, and therefore first affects the skin and subcutaneous tissue. This method of spread, however, is less frequent than the next one.

The mammary duct. In many cases a drop of milk remains hanging at the mouth of the duct and forms a favorable cultivating medium for pathological bacteria, which pass from here into the galactophorous sinus and finally into the smallest divisions of the infected portion of the gland, producing according to their degree of virulence a more or less violent inflammation of the parenchyma of the udder. At the first glance it seems astonishing that inflammatory processes are not more frequently produced in this way. The apparent rarity is explained by the fact that an effectual closure mechanism exists in the milk duct, and that the milk seldom remains pent upon the udder for any long time. Numerous experiments made by Franck, Nocard, Kitt, Bang, and others, in which pure cultures of certain bacteria have been injected into the galactophorous sinuses show that inflammation may start here. Lately it has been disputed whether inflammation of the udder can be caused by not milking the animal. Whilst this was formerly regarded as a frequent cause of mastitis, the general view nowadays is that retention of the milk alone seldom produces disease of this description. It is evident that neither view is quite right. The retention of milk, as such, certainly does not produce mastitis, but it favors its production, because of the readiness with which decomposition and the growth of bacteria occur in the retained milk. This explains why mastitis is most common during hot weather; some authorities state that most cases occur between March and September. Other causes may also be at work, such as the animal's condition, the attention it receives, and the time during which the calf is with it; but it is unquestionable that warm weather favors decomposition of the milk and the multiplication of bacteria in it.

(*Continued next month.*)

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Harvey Cushing, M. D.—Bigot

THE Seventeenth International Congress of Medicine, which was held in London during August received conspicuous notices in these pages. Unfortunately the congress did not in all respects measure up to the predictions and promises made concerning it, but rather tended in some instances to develop into a huge advertisement and mutual admiration society. The most unfortunate, unnecessary, unfounded and libelous utterance of the whole meeting so far as the veterinary profession is concerned came from an American— Harvey Cushing, M. D., F. R. C. S., professor of surgery in Harvard University, who in an address on the "Realinements in Greater Medicine" said:

"Though less true of many European countries, where veterinary institutes which are doing admirable progressive work are under Government control in close association with universities, in the United States, and I think the same is true in a measure of Great Britain, most veterinarians have profited not at all by the advance in general medical knowledge of the past generation. This applies particularly to veterinary surgeons who still trust, in the operations which they venture to undertake, to the rough and casual methods of old, with scant if any pretence to the modern refinements of skilful anesthetisation and aseptic surgical technique. Little wonder that people who are aware of this difference prefer to have their pets, when in need of surgical care, operated upon in an experimental laboratory rather than in many of the established veterinary hospitals. Some years ago, in the surgical laboratory at Johns Hopkins, this work grew to such proportions that a course covering the technic of operative procedures was offered to a group of veterinarians, who there for the first time learned the methods which would enable them to save valuable animal lives by procedures which they had considered impossible. and which for the general run of veterinary surgeons had been impossible."

We are not concerned about Doctor Cushing. Any attempt to add to the sum total of his knowledge of the veterinary profession would doubtless be met with opposition, as his attitude toward such information in the past must have been, and any subtraction from his knowledge of this subject would convert the entire minuend into a remainder. The unfortunate part of his statement comes from the wide circulation which it was given.

It is a matter of felicitation to veterinarians in this country and elsewhere that our *confrerès* in Great Britain were prompt to resent this gratuitous insult to the veterinary profession and to point out the libelous character of the charges. McFadyean, Hobday, Hoare and others immediately voiced their protests in the public and veterinary press of London.

A careful reading of Professors Cushing's address shows him to be possessed of profound knowledge on the history of medical progress, but in the paragraph quoted above and elsewhere, when comparative medicine was touched upon his woeful ignorance of the subject was most apparent.

Even a modicum of that valuable possession known as common sense should have prevented him from citing as evidence of the inferiority of veterinarians as surgeons the fact that he had known instances where persons had sought free treatment for their animals at the laboratory of the Johns Hopkins Medical College. The widely prevalent desire to obtain something for nothing would bring plenty of human patients to the clinic of any veterinarian should he establish one adjacent to Harvard University and offer free treatment, provided of course, that Professor Cushing charged for similar operations.

As a matter of fact the veterinary profession has made vastly greater progress during the past generation than has the profession of human medicine. It may be only just to state that the opportunity for its improvement was greater but the fact that it has progressed remains the same. To cite a couple of examples where many might be given: Biologic therapy both prophylactic and curative is in wider use and is better understood by veterinarians than doctors of human medicine. Abdominal surgery or other major surgical operations are successfully and skilfully performed almost daily by nine-tenths of the members of the veterinary profession, while on the other hand nine-tenths of the doctors of human medicine would hesitate to perform operations of this nature on their patients under any circumstances. The statement that anesthetics are not used and that is not appreciated by veterinarians is too absurd to merit denial.

The prediction is safe that were Prof. Cushing connected with a state institution particularly of an agricultural state his wild break in London would have brought an immediate demand for his resignation.

SENSE AND NONSENSE—ABOUT RABIES

The first of September Doctor Noguchi, of the Rockefeller Institute for Medical Research, New York City, announced his discovery of the casuative factor of rabies. Doctor Noguchi has cultivated this organism for several months and believes it to be protozoon.

Simultaneously with the announcement of Noguchi, Lillian Russell, beauty specialist de luxe, unburdened herself in the *Chicago Tribune* of the following on the subject of rabies.

"Most animals, as man and horse, sweat by means of the skin, while others, as the ox and dog, sweat only by the tongue, and the terrible effects of checked perspiration may be seen in the last named animal, which becomes mad or rabid as soon as the tongue ceases to sweat, for hydrophobia is only checked perspiration in the dog, by which the poisoned humors of the body are retained, producing these most frightful effects.

"Most of us know that in a majority of diseases the patient begins to recover the moment he begins to sweat."

More remarkable than the discovery of Noguchi, is the fact that tens of thousands of well-meaning but misguided people, including hundreds of physicians, ministers and other public men, prominent workers in the anti-cruelty-to-animals societies, not as few editors and a very few, at most, less than half a dozen veterinarians will take the word of fair Lillian on this subject in preference to that of Doctor Noguchi, one of the ablest pathologists of the present time, but then it takes all kinds of people to make a world.

FIFTIETH ANNUAL MEETING A. V. M. A.

Attendance 1000.

New officers:

President, C. J. Marshall, Philadelphia;

Secretary, N. S. Mayo, Blacksburg, Va.;

Vice Presidents, Torrence, Eichhorn, Blair, Archibald,and Jacobs.

Treasurer, Tradition unbroken.

Next convention city, probably New Orleans.

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The Fiftieth Anniversary Meeting of the American Veterinary Medical Association, held in New York City the 1st to 5th of last month, was, so far as the jubilee part of it was concerned, something of a disappointment, but as an annual meeting it was a record-breaker and set a mark—a standard for attainment that will be eclipsed by near-future meetings only with great difficulty.

The total attendance of members and visitors was somewhat less than 1000, and in this the New York meeting made its poorest showing. It was not believed before the meeting that the attendance could be less than 1500 and many placed it at twice the number who actually attended. Barely exceeding the Toronto and Indianapolis meetings the New York meeting conclusively demonstrated that veterinarians attend the annual meetings of the A. V. M. A. for the sake of the meeting and not for the sight-seeing that may be indulged in enroute to and from the meeting or in the convention city. Aside from the meeting, New York with its Broadway theatres, its Fifth Avenue millionaire residences, its tallest of all office buildings, its indescribable ghetto and its reputation for—well it doesn't much matter what the reputation is, suffice it that it has a reputation, and its horse cars, let us not forget the horse cars because of the pointed reminder before the meeting; with all these and more New York "pulled" not a whit better than Indianapolis which indicates that veterinarians are truly a serious-minded folk, intent only upon the acquisition of scientific information, and incidently furnishes executive committees a tip on the selection of convention cities for future meetings.

The number of new members (more than 300) added to the association was larger than at any previous meeting and larger than the total membership but a few years ago; yet this is not enough, last spring the colleges graduated more than 700, who are eligible for membership in the association. Something should be done to render membership in the A. V. M. A. more attractive to those who are not in the association.

No accurate account of all that was accomplished at this meeting can be given in advance of the publication of the official proceedings; most of the program is rendered in section meetings which occur simultaneously and the business of the meeting is done chiefly in committees, some of which, particularly the executive committee, meet at unseasonable hours when ordinary veterinarians are asleep, perhaps after all more than a summary of the meeting would prove dull reading to most of us.

The program was carried out very nearly as published in the August issue of VETERINARY MEDICINE, and the papers were without exception good, many were excellent. The omission of the usual clinic was bewailed by many practitioners but the symposium on lameness was adjudged to have made up in practical value for the lack of clinical instruction.

The dropping of the Ontario Veterinary College from the list of colleges whose graduates henceforth will be eligible to membership in the association was a surprise to everyone and one of the really few regrettable things that happened during the meeting. It was wholly unnecessary too and might have been averted by the exercise of a little more diplomacy. The whole matter was threshed out in the executive committee and none not directly interested were permitted to hear either side of the controversy, but as discussed unofficially in the corridors it appeared to be about thus: for reasons which seemed to Dr. E. A. Grange, Principal of the Ontario Veterinary College, to amply justify his action, he objected to the personnel and also to the former actions of the committee ap-

pointed to investigate the course of instruction given in the various veterinary colleges whose graduates are accepted for membership in the A. V. M. A. and refused this committee an opportunity to investigate the Ontario Veterinary College; the association being well satisfied with the work of the committee in the other colleges and holding it blameless of the charges made against it refused to appoint a different committee and thus the matter stands, an injury to all parties concerned.

The Nominations Committee, consisting of all ex-presidents in attendance at any meeting of the association, is no more; a lot of oratory, most of it good, and some of it fervid to fiery was called forth by the motion to dispense with this committee, but it is not probable that a single vote was influenced either way by the speech making. The discussion of this matter in VETERINARY MEDICINE some time ago prepared the way for the vote that was taken. No committee could possibly please everyone in the matter of nominations and if a workable substitute for the nominations committee is found none will be more pleased by the discontinuance of the nominations committee than will the former presidents themselves. It relieves them of a duty, the performance of which was of necessity always displeasing to a number of those present.

The work of the committee on reorganization was adjudged by the executive committee, to whom it was referred, to have been poorly done and was sent back to the committee for more careful consideration without coming before the association except by title. There is some question now whether final action on the report can be taken at the 1914 meeting. Should the amended report of the committee on reorganization be delayed too long for inclusion in the official proceedings, and final action on it thus precluded at the next meeting, the action of the executive committee in this matter will have been unfortunate, for after all the particular plan or plans for reorganization are by no means of transcendent importance since they may be wholly changed or rejected altogether by the association.

The dues of the members was raised from three dollars to five dollars per year, this action was probably wise, although the need for the increased funds was not apparent from the treasurer's report.

A better way to increase the funds of the Association would be to discontinue the exemption granted the Honor Roll. This exemption is without a sound basis anyhow, since after twenty-five years or more of professional life the average man is better able financially to stand the assessments of the Association, and as a rule has fewer dependent upon him than at the beginning of his professional career.

The salary of the secretary was raised to $750 per year. This was a wise move. The secretary will have plenty of opportunity to earn this and more during the year as did his predecessor during the past year.

On the recommendation of the Executive Committee the Association went on record as opposed to the raising of large sums by any local committee for the entertainment of veterinarians and their wives attending the annual meetings. This is a well-advised move, in that the scale upon which recent meetings of the Association have been entertained has been so costly as to render an annual meeting burdensome to veterinarians in the city in which it is held, except in centers containing a large number of veterinarians. For the good that the Association may do by meeting in cities in which there are but few veterinarians and in a territory in which there are but few members of the Association, the expense upon the local committee should be kept down to a point where the veterinarians in such cities will not feel unable to invite the Association to hold its annual meeting with them.

The work of the local committee in connection with the New York meeting was praised by everyone. The accommodations for the meeting which were furnished at the Hotel Astor were perhaps the best ever offered the Association and the social program offered the visiting ladies has not been excelled elsewhere. Everyone left the meeting promising the local committee to return for the celebration of the centen-

nial anniversary of the founding of the Association, if New York would give them the invitation.

The commercial exhibits, as usual, were most excellent and formed a very attractive part of the meeting.

The report of the Special Committee for the Detection of Glanders was probably the most important committee report presented to the Association and received very earnest consideration. It will be given in full next month and merits the careful study of every reader of VETERINARY MEDICINE.

The study tour of Europe for veterinarians attending the International Veterinary Congress in London, August 1914, as proposed by Dr. Adolph Eichhorn, director of the tour, and conducted under the Bureau of University Travel, was endorsed by the association and thus becomes official. A large number of those present signified their intention of making this tour and it is certain to prove a very popular one with American veterinarians. As an official tour of the A. V. M. A. the tourists will have more prestige and will be given greater consideration abroad than as a private affair and the tour will also prove more attractive to American veterinarians.

With all that was accomplished by the Association as a whole and in its various committees, many things that might have been done profitably were left undone. For example, another annual meeting has passed without any effort being made to in any way affiliate the Association with other associations having to do with animal industry and related subjects.

The A. V. M. A. will never have the influence in national and state affairs while it works independently, that it might have by securing the cooperation of, and working with, allied associations. It was hoped that some move might be made at this meeting to bring the A. V. M. A. into closer relations with the various national breeders associations, the American Association for the Prevention of Cruelty to Animals, the Madison Square Horse Show, the International, Royal, and Southwestern Live Stock Shows, the various dog and cat breeders associations, the animal husbandry departments of the various agricultural colleges, the national farming congresses, etc., etc., but nothing of the kind was done.

An invitation to the association to hold the next annual meeting in Kansas City, Missouri was given by the Missouri Valley Association, the Missouri Veterinary Association, and the Kansas City Veterinary Association. An invitation was also extended from New Orleans, and while the next place of meeting has not been definitely decided upon, New Orleans appeared to be the favorite of those at the meeting and it was thought that instead of holding the meeting at the usual time, in August or September, the 1914 meeting should convene, if held in New Orleans, on December 28th. The mayor of New Orleans and also a representative of the Commercial Club of New Orleans in person invited the Association to that city.

TREATMENT of tetanus with pilocarpine. A. Tachaner (Allatovorsi Lapok, 1913, Vol. No. 9).—This deals with a case in a foal who contracted tetanus three weeks after castration and was successfully treated with pilocarpine. At the outset the animal received injections of 0.4 grams of pilocarpine and 0.1 grams of eserine. The following three days the injections were repeated and the amount of pilocarpine increased 0.1 gram per day. The suppurating wound was washed (irrigated) interchangably with either a solution of lysoform or corrosive sublimate. After treatment for four days the spasms ceased. No further injections were given. On the sixth day recovery set in, but the animal was not fit for work until two months later.

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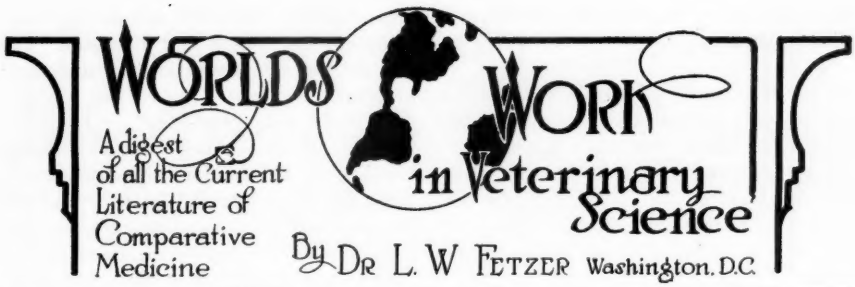
STUDIES on cottonseed meal toxicity II. Iron as an antidote. W. A. Withers (J. F. Brewster, et al. Jour. Biol. Chem., 1913, Vol. 15, No. 1, pp. 161-166).—The experiments lead the authors to suggest that iron salts be used as an antidote for the toxicity of cottonseed meal. See also August number of this journal, pages 404 and 422.


WORLDS WORK
in Veterinary Science
A digest of all the Current Literature of Comparative Medicine
By Dr L. W Fetzer Washington, D.C.

LEAD poisoning in the bovine and salt poisoning in the pig. District Vet. van Straaten (Berl. Tierärztl. Wochenschr. 1913, Vol. 29, No. 14, p. 266).—Bovines are very susceptible to lead poisoning. This occurs very often where animals drink from ponds or streams in the neighborhood of factories handling lead. In the neighborhood of Dusseldorf no lead factories are located but frequent deaths amongst animals in the spring of the year from lead poisoning are noted. In the acute form of the disease the following symptoms were noted: at the outset disturbances of digestion, loss of appetite, salivation, tympanites, constipation, later diarrhea and nervous disturbances.

The anatomical findings are almost negative, the intestine is pale, with occasional hemorrhages in the small intestine. The animals usually die as a result of cardiac paralysis. A later search revealed that the animals were watered from wooden troughs which had been painted with red lead.

Salt poisoning occurred where pigs were usually fed with kitchen and cheese making refuse. Cases of salt poisoning in fowls as a result of drinking brine which had been used for conserving herrings are also mentioned. The patho-anatomical change consisted of an inflammation of the gastro-intestinal tract. The animals were very thirsty, vomited and had severe cramps.

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TUBERCULAR birds as a cause of tuberculosis in pigs. O. Bang (Zeitschr. Infektinskr. Hyg. Haustiere, 1913, Vol. 13, No. 5, pp. 215-225).—This work shows that tuberculosis in hogs can have its origin from tubercular fowls. Of forty-six animals in one barn there were thirty affected with either mesenteric or cervical tuberculosis.

—

SALVARSAN in experimental rabies. F. Marras (Arch. farm. Sper. 1913, Vol. 15, pp. 173-177).—The experiments show that guinea pigs subcutaneously injected with fixed virus will not respond to treatment with salvarsan even though the treatment is begun immediately or twelve to eighteen hours post infection.

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TESTS in regard to the value of the opthalmo reaction for diagnosing glanders, von Lorenz (Berl. Tierärztl. Wochenschr. 1913, Vol. 29, No. 14, pp. 252-255).—This test is a good one for diagnosing glanders in practice, providing the test is carefully conducted and properly interpreted.

—

PROTECTIVE and curative tests for the pectoral form of equine influenza. K. Nowacki (Berl. Tierärztl. Wochenschr. 1913, Vol. 29, No. 13, pp. 233-236).—A description of outbreaks in two barns. The serum-vaccine treatment is considered a valuable means of immunizing animals against this disease.

—

ON A METHOD of disintegrating bacterial and other organic cells. J. E. Barnard and R. T. Hewlett (Proc. Roy. Soc. [London], Ser. B, 84, No. B 568, pp. 57-66, pl. 1, figs. 2).—This is an illustrated description of the apparatus and the results of some work done with the same—yeast and bacterial cells. The method has, according to the author, decided advantages over

those devised by Buchner and McFayden and Rowland.

—

THE TREATMENT of hemoglobinuria of bovines with trypan-blue (Nutall). Dr. Bergshicker (Berl. Tierärztl. Wochenschr. 1913, Vol. 29, No. 28, pp. 499-500).—Trypan-blue was found to be an efficient cure for all cases of piroplasmosis boun. The cases treated also included severe forms of the disease.

—

SOME clinical results with chlormeta-cresol for rapid disinfection of the hands. H. Kondring (Deutsch. Med. Wochenschr. 1913, Vol. 39, No. 11, pp. 513-515).—In this work the value of a proprietary preparation called "Phobrol" was tested as regards its value as a rapid disinfectant. It consists of a fifty-percent solution chlormetacresol in an emulsion of potassium ricinoleate. For gynecological work a one percent solution of the same used in connection with seventy percent alcohol or with acetone—alcohol (20:100) was found very efficient as a rapid disinfectant for the hands and the field of operation. For operations requiring a long time a second disinfection of the hands (25-30 minutes later) is necessary and for this purpose the phobrol-alcohol mixture is preferable. This substance in alcoholic solution is odorless and does not affect the skin.

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IN REGARD to the use of lactic (milk) ferments in veterinary medicine. L. and E. Lepinay (Revue de Pathologie comparëe 1913 through Berl. Tierärztl. Wochenschr. 1913, Vol. 29, No. 26, pp. 471-472).—These tests were conducted with dogs and cats and the following preparations—whey, curdled milk, kefir, lacteol, lacto-bacilli, lactyl and others. The preference is given those which are sold in powdered form containing plenty of sugar and rich in ferments. Many of the liquid cultures were almost immediately vomited by the animals. The use of this class of preparations is indicated in the diarrheas of young dogs, inflammation of the stomach and intestinal tract (hemorrhagic enteritis) of older animals, dermatoses (pruritis, eczemas) resulting from digestive disorders and in the treatment of oral wounds and abscesses. The methods of administration are described in detail.

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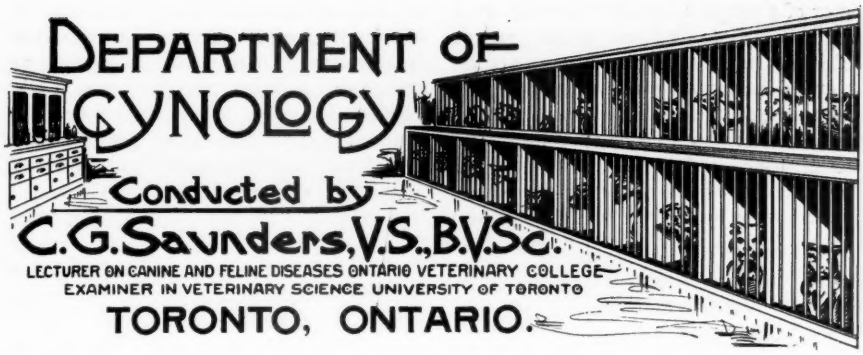
NOTES on the biology of the tubercle bacillus, T. Smith (Jour. Med. Research, 1913, Vol. 28, No. 1, pp. 91-110).—Tubercle bacilli of both human and bovine type, when kept in fully developed cultures at 40° to 50°F., may remain infectious to guinea pigs for from seven to nineteen months. The number of bacilli surviving in such cultures is relatively small. Many tubercle bacilli from easily cultivated strains which fail to multiply on fresh culture media will multiply in guinea pigs. In one of the experiments one-fifteenth-hundredth of the mass which failed to grow on glycerin agar was still capable of producing generalized tuberculosis.

Of the two strains tested side by side, the bovine was more resistent than the human strain. This may be in part accounted for by the fact that the human type produces much more acid in five percent glycerin bouillon than the bovine type after two to four weeks of growth. It may also be due to a greater inherent resistance of the bovine type. In all experimental studies bearing on the behavior and fate of tubercle bacilli in the animal body, the character of the culture must be taken into account and its history should be known.

—

STUDIES on the virus of hog cholera. W. E. King, F. W. Baeslack and G. L. Hoffman (Jour. Infect. Dis. 1913, Vol. 12, No. 2, pp. 206-235).—A criticism of von Betegh' findings and a report of investigations with forty-eight normal hogs and forty hogs affected with hog cholera. The blood of all cholera hogs was found to contain a spirochete to which the authors propose to give the name *Spirochaeta suis*. While the spirochete was only found with difficulty in the blood in some cases, it was more readily noted in the acute form of the disease. It was found uniformly in the intestinal ulcers of hogs dead from the disease. See also August number of this journal page 420.


DEPARTMENT OF
CYNOLOGY
Conducted by
C. G. Saunders, V.S., B.V.Sc.
LECTURER ON CANINE AND FELINE DISEASES ONTARIO VETERINARY COLLEGE
EXAMINER IN VETERINARY SCIENCE UNIVERSITY OF TORONTO
TORONTO, ONTARIO.

Diseases of the Digestive System

I.—DISEASES OF THE MOUTH—PHARYNX AND ESOPHAGUS

Stomatitis or inflammation of the buccal mucous membrane is the result of either chemical, thermal or mechanical irritants and is often a complication or symptom of some other disease or condition. It is also common during teething, and where there are decayed teeth.

Symptoms.—The patient is noticed to be slow and careful in eating, large pieces of food being discarded and smaller portions bolted without mastication. Salivation is a prominent symptom, the saliva hanging out at the corners of the mouth in glairy strings. Upon examination the mucous membrane of the mouth will be found to be red, swollen and inflamed. The amount of inflammation depending on the cause; in the case of corrosive poisons having been taken into the mouth the mucous membranes may be greatly eroded and hanging in shreds; the gums and tongue are also inflamed and tender; ulcers sometimes appear on different parts of the mouth.

Treatment.—The diet must consist of bland and non-irritating liquids or mashes such as soups, milk, beef tea, bread and milk and boiled rice; plenty of cold water should be supplied constantly.

The mouth should be kept clean with antiseptic and mild astringent washes, either applied with a camel's-hair brush or an atomizer; decayed and loose teeth must be removed and the tartar cleaned off of the remaining teeth. In teething the inflamed gums may be lanced.

The following are useful mouth washes for this condition: potassium permanganate solution, one percent; peroxide of hydrogen, one to five parts water; or borax, 130 grains; sodium bicarbonate, 130 grains; carbolic acid, twenty-five grains; glycerine, five one-half drams and water to make twenty fluid ounces. Ulcers may be touched with tincture of iodide or a strong solution of alum. The tender gums may be painted with tincture of myrrh or tannic acid one part and glycerine four parts.

Stomatitis Ulcerosa or Necrotic Stomatitis

This condition is a necrotic inflammation of the mucous membrane of the mouth. It attacks the gums more frequently than other parts.

Etiology.—This serious condition is generally seen in old debilitated dogs and in weakly, anemic and pampered animals of all ages. It is usually associated with decayed teeth and is no doubt due to some, or possibly to various invading micro-organisms.

Symptoms.—The gums in the neighborhood of certain teeth become swollen, red and painful to the touch. In a day or so there is marked increase of the swelling and the affected gum is of a dark red, brown

red or of a purplish hue; the tissue affected is spongy, bleeds on the slightest pressure and is seen to have receded from the teeth. Later on, beginning with the swollen part next to the teeth the affected part takes on a yellowish or greenish yellow color. This necrotic tissue is of a pulpy, greasy, consistency and if removed either by the sloughing process or by force, leaves a large ulcer about one-sixteenth of an inch deep, with irregular, ragged edges.

Stomatitis Ulcerosa

Symptoms.—The walls of the ulcer are hard and hyperemic and raised above the gum surface. As the gangrenous process proceeds, abscesses form in the alveolar process, the teeth become loose and fall out; in extreme cases, the jaw itself may become necrotic and portions of the bone exfoliate.

The morbid process extends from the gums to the lips, and cheek, corners of the mouth and in rare cases to the tongue. There is always a profuse salivation, the discharge being ropy, glairy, blood-stained and of an intolerably fetid odor. There is usually a rise of temperature, 103°F. and even higher if septic absorption takes place, in which case the patient usually dies of septicemia.

The appetite is generally good although mastication is both painful and difficult. In cases that run a benign course the necrosis is usually confined to the mucous membrane and after the separation of the slough the ulcers heal rapidly, often being entirely well in from eight to ten days. In the case of old, debilitated subjects the disease more often assumes a malignant type; the gangrenous and necrotic processes extend rapidly, and the animal dies from septic absorption.

Treatment.—All loose and decayed teeth must first of all be extracted and abscesses evacuated. The mouth must be frequently swabbed with deodorant mouth-wash, such as potassium permanganate in one-percent solution, hydrogen peroxide, etc., and afterwards strong disinfectants applied. Creolin in two percent solution painted on with a camel-hair brush is most effectual. Lugol's solution of iodine applied in the same manner gives good results; touching up of the ulcers with caustics is also effective. Internally the patient should receive an occasional laxative and an iron tonic. Nuclein (eight minims hypodermically twice daily) should be given from the start and the animals strength kept up by a liberal and easily-digested diet.

Glossitis

Cause.—Inflammation of the tongue is usually the result of injury by foreign bodies becoming embedded in or lacerating the substances of the tongue. Among the common causes of this condition may be mentioned spicules of bone, that become lodged between the molar teeth; elastic bands placed around the tongue either by children in play or by some malicious person; irritant medicines, and caustics; new growths (carcinoma, sarcoma), etc.

Symptoms.—The animal shows difficulty in mastication and in lapping water. Salivation is present. The tongue is red, swollen and tender. The breath is often offensive.

Treatment.—A careful examination of the tongue must be made for foreign bodies which if present must be removed. The teeth must also be examined for particles of bone wedged between them and if any are found, they must be removed. Wounds of the tongue heal with remarkable rapidity and often the removal of the cause and the use of some mild antiseptic mouth-wash completes the cure.

Ranula

A large fluctuating swelling which appears at the lateral or under surface of the tongue usually near the frenum. It is painful and produces profuse salivation, and may attain such as size as to prevent the complete closure of the mouth.

Cause.—Ranula is due to the blocking up or closure of the mucous gland and the consequent enlargement of the gland. An obstruction of Wharton's duct sometimes produces similar condition. The contents of ranulae are of a thick, glairy, mucoid nature.

Treatment by operation.—INSTRUMENTS: mouth speculum; small scalpel; scissors

and tissue forceps. The instruments being sterilized by boiling for twenty minutes; the mouth is fixed open with a mouth speculum and the tongue drawn into such a position as to place the ranula in the most suitable situation for removal. The sac then punctured with the scalpel and the whole of the wall dissected out. Unless this is completely done the ranula will recur. After treatment consists in washing out the wound three or four times a day with an antiseptic and astringent mouth wash. Boracic acid, ten grains to the ounce or chinosol one-half grain to the ounce of water make useful antiseptic washes.

Epulis

This name is given to a hard, smooth periosteal tumor which appears on the gums at the edge of the alveoli. There may be only one or they may be numerous. They may be benignant or malignant in character. Unless these tumors cause pain and undue inconvenience in eating it is better not to interfere with them. If an operation is decided upon, they may be removed with a scalpel or scissors and the hemorrhage controlled by styptics. Occasionally there may be a bony attachment in which cases bone forceps will be necessary to complete their removal.

Papilloma or Wart

These are often multiple and may cover nearly the entire surface or the mucous membrane of the lips.

Etiology.—They are contagious.

Treatment.—In many instances they disappear spontaneously without treatment and the animal is immune against a second infection. Where they are very numerous local applications of a saturated tannic acid solution should be applied and Fowler's solution given internally for at least a month before resorting to surgical means. If, however, there are only a few present or the above treatment is futile, they may be removed by ligature or with the thermocautery. It is best not to excise them with the scalpel or scissors as the blood may infect a new area.

Neoplasms

The new growths met with in the mouth and pharynx of the dog are mostly, carcinoma, sarcoma and adenoma. They usually are found affecting the soft palate, the pharynx and the vicinity of the tonsils; sometimes even invading the Eustachian tubes.

Symptoms.—The patient shows at first some difficulty in swallowing and the appetite may be capricious. Upon examination the growth may be discovered or if deep-seated an unhealthy looking ulcer with ragged edges may be seen. This may be mistaken for an injury caused by a bone or some other foreign body, but the involvement of the neighboring lymphatic glands and the non-response to treatment, in time reveals its true character. The diagnosis may be absolutely confirmed if a small portion be excised and submitted to an expert pathologist for microscopic examination. In all cases there is rapid emaciation and sooner or later death relieves the sufferer.

Treatment.—There is no successful treatment. Surgical interference appears to stimulate the malignant properties of these neoplasms and the most humane way, once the diagnosis of malignancy is positive, is to end the animal's suffering with an overdose of chloroform.

Hair Lip and Cleft Palate

These congenital malformations may occur conjointly or singly and are serious defects, more especially is this true of the latter as it is impossible for the puppy to feed in the natural way and it has to be fed from a feeding bottle with a nipple large enough to reach to the back of the mouth.

A hare lip may be double or single, a cleft palate may be wide or narrow, existing either in the anterior or posterior portion of the mouth; or it may extend the whole length.

Treatment.—The treatment is surgical and consists of scarifying the edges of the lips or palate and uniting them by sutures, the details of this operation will be given later.

The Teeth

The dog has forty-two teeth, formulated thus:

$$\frac{\text{i. } 3\text{-}3 \quad \text{c. } 1\text{-}1 \quad \text{pm. } 4\text{-}4 \quad \text{m. } 2\text{-}2}{3\text{-}3 \quad 1\text{-}1 \quad 4\text{-}4 \quad 3\text{-}3} = 42$$

The first incisors and the canines and the second, third and fourth molars appear in the dog at the end of five weeks. The permanent teeth begin to appear about the third or fourth month; the canine and middle incisors about the fourth month, the remaining incisors at the end of five months as well as the second, third and fourth molars, the fifth molar about five months, the sixth about the sixth month and the seventh about the end of the seventh month. Then the dog has a "full mouth" at the end of the seventh month.

During teething the gums become red and tender and the flow of saliva is increased. In some cases the appetite may be entirely suspended and convulsions may occur from reflex nervous irritation; the proper treatment for these cases is the administration of simple sedatives such as potassium bromide (five grains three times daily) and scarification of the gums.

Tartar

Tartar is a calcareous deposit on the neck of the tooth at the border of the gums. It is deposited chiefly around the canine and molar teeth, and causes great irritation of the gums, sometimes it loosens the teeth and gives the breath an offensive odor. Tartar should be removed by scraping the tooth with a specially constructed instrument termed a scaler; the mouth either being closed with a tape or kept open by means of mouth speculum. In powerful, violent patients a general anesthetic may be necessary to facilitate the operation of removal. The teeth should then be cleaned with a tooth brush and camphorated chalk or other suitable dentrifice.

Caries of the Teeth. Caries Dentum

True caries of the teeth, i. e., molecular destruction is rare in the dog, but cases have been observed. It begins on the upper surface and mainly in the cavity of the crown, appearing as a black spot. This spot which is the decaying part of the tooth, gradually penetrates the tooth towards the pulp cavity; finally exposing the nerve, toothache being the result.

In necrosis of the teeth, there is usually an alveolar periostitis associated with it; the tooth becoming looses and yellow in color. In these cases alveolar abscesses may form and pyorrhea alveolaris or dental fistula remain. An animal affected with toothache, becomes irritable, resents any manipulation of the mouth, has difficulty in mastication and is salivated. The affected tooth is very tender and if struck with a sound or key causes the animal to howl or cry.

Treatment.—In true caries, if treated before the nerve is exposed, the tooth may be saved by carefully drilling out the cavity, removing all diseased tooth substance and filling the cavity with dental cement or amalgam. If, however, the case has gone too far, for filling, extraction is the only remedy. For this purpose the mouth is held open by a speculum or gag, the forceps applied as far on the tooth as possible, the tooth loosened by a few lateral twists and finally extracted by a strong pull in the direction of its roots. Immediately after extraction the gums should be firmly compressed and the mouth washed out with an antiseptic lotion.

Empyema of the Superior Maxillary Sinus

Necrosis of the fourth upper premolar often leads to empyema of the superior maxillary sinus into which its roots penetrate. The pus discharging by a fistual just below the eye. This fistula may heal for a time under an antiseptic treatment. But sooner or later the discharge is reestablished. By the use of a probe and tapping the affected tooth the significance of the fistula is recognized.

Treatment.—The fourth premolar must be extracted, the probe pushed down the fistula into the mouth, the sinus syringed out with an antiseptic and free drainage maintained. The syringing is continued until healing takes place.

PULMONARY TUBERCULOSIS IN A DOG

Subject—Registered English bull dog, two years old, weighing about thirty-five pounds.

History.—About three months ago the animal was first noticed to have difficulty in breathing. This difficulty gradually increased and the animal began to show emaciation. The dyspnea was especially pronounced after the animal walked a block or two.

Symptoms.—Dyspnea, emaciation and a crackling or clicking sound was emitted during inspiration. The submaxilliary glands, bronchial glands, thyroid and inferior cervical glands were swollen and greatly enlarged and stuck to the trachea. The temperature was 102° F.; pulse eighty-four per minute; respiration seventy per minute; auscultation revealed dullness and suppressed respiratory murmur.

Diagnosis.—Pulmonary tuberculosis. I drew this conclusion partly from the history of the case, but mostly from the *status præsens*. To confirm my diagnosis I autopsied the animal on August the seventh and found the following: the bronchial glands, which were of the size of a hen's egg, were filled with a dirty grey pus; the lungs were in a state of atelectasis and stuck tightly to the ribs; tubercles of the size of a pea, having a dark color were found scattered all over the lungs.

J. D. Bell, V. S.

Lansing, Michigan.

CASTRATION OF A CRYPTORCHID DOG

The patient was a large imported Scotch collie dog, about one year old. The dog would not stay at home and the owner getting disgusted brought him to my office for castration. I was not there and the dog was left in the kennel. An examination revealed one testicle in the half developed scrotum. I called the owner and told him what had been found. He said the dog was left there for castration and he wanted it done.

The patient was securely fastened squarely on its back in a spaying trough. I chose the scrotal region as a seat of operation. The parts were prepared and cleansed by my assistant while I got in readiness the necessary instruments, etc. An incision one and one half inches long was made through the skin parallel to median line and near it. The subcutaneous and connective tissue was separated by blunt dissection to the external inguinal ring, as nearly as I could tell. I now wound my index finger through the canal to the internal ring, which did not seem large enough to accommodate it at first, but with a little pressure the structure became less tense and I perforated the peritoneum. My finger was in immediate contact with a soft mass containing harder and firmer thread like structures. I withdrew my finger with the spermatic cord following in close proximity to the external ring. It was readily withdrawn now from this point with the finger tips. The testicle, rudimentary in development and flabby in structure, was easily brought to the surface. The cord was severed with an emasculator.

The dog was fed and placed in a kennel and made an uneventful recovery. He was sent home the second day after the operation.

One may call at Mr. Rothschilds, Atlantic, Iowa and find the big, fat collie happy and contented now. He stays at home!

V. J. Robinson, M. D. C.

Atlantic, Iowa.

GOITRE (STRUMA MOLLIS) IN PUPPIES

Some three months ago I was asked to look at a litter of eight pedigreed Airedale puppies, four months old. I found all to be affected to a greater or lesser extent with goitre. The hypertrophied thyroids varied in size from an orange down to that of a golf ball. In all cases both glands were affected, though not necessarily equally so. The swellings were soft, elastic, and not nodulated.

History.—The pups had been well cared for, and were in good condition. They had plenty of fresh air and exercise, and were born and had remained in a place well above sea level.

Muller states heredity in young animals is a predisposing cause (struma congenita). I therefore examined both parents very carefully, but they were perfectly healthy, though, of course, this does not disprove the case being one of heredity.

Treatment.—Grs. 3 Potass. iod. daily in milk, water to be boiled; externally iodide ointment to the swellings, and half a thyroid from a freshly killed sheep for each pup daily.

Result.—The swellings after five or six days started to subside, and in three weeks had disappeared, leaving the thyroids normal, and now, some nine weeks later, there is no trace of recurrence.

It is an open question whether these puppies would not have recovered spontaneously—not having had previous experience of a similar case I offer no opinion; nor am I prepared to affirm that the treatment was responsible for the rapid cure; it was simply based on the lines of the orthodox treatment for human beings. The result was certainly surprisingly satisfactory, and as I fancy the condition is not a common one, I record it.—E. S. GILLETT, A. V. C., Saharanpur, India, in July *Veterinary Record.*

ABNORMAL LACTATION

I have been written to by two or three practitioners from different parts of the country at one time or another on the question of abnormal lactation, so I thought I would mention that subject, as apparently it is interesting to some practitioners. Abnormal lactation does occur in the maiden bitch, and sometimes is a very awkward thing to deal with. It occurs at the time when puppies would be normally expected by a bitch, i. e., at from fifty-eight to sixty-five days after the period of heat. The glands become enlarged and full of milk, and unless the milk flow is stopped or treated you may get a distinct milk fever, the bitch going off her food, sometimes being upset, vomiting, sometimes accompanied by diarrhea, with the glands distinctly inflamed and the dog evidently ill.

A great many practitioners make a mistake in these cases of drawing the milk off. If once you begin to draw the milk you increase the flow; you only make matters worse, because if you create a demand, nature will give the supply. I think the rational way to deal with the case is not to create any demand, and then nature will no longer supply. Owners should be warned against drawing the milk. Some people tell me that they do it twice or three times a day in order to give relief. I think this case is quite easily dealt with, and should cause no alarm.

At the first sign of the gland swelling, give the bitch a good dose of magnesia, epsom salts or calcined magnesia in the food—anyhow, some saline aperient, and gently rub the glands with belladonna and glycerine. Be careful not to use too much belladonna.

I remember a case of poisoning through that, which I reported in one of the journals, from the dog licking the belladonna. Use the belladonna with discretion. Belladonna in glycerine will stop the flow, and take the pain away often in a couple of days.

The owner should be warned against a recurrence at some future time, because in bitches where it has happened once it nearly always happens again. I might also mention that an opinion is held by breeders, and also by a good many practicing veterinary surgeons, that the whole thing can be stopped by letting the bitch breed: that if once she has a litter of puppies such a thing will never happen again. That is absolutely wrong. I have had a case within the last six weeks in which a bitch had had five puppies previously, and the next time she came on heat it was followed by this abnormal lactation just the same; and I have known that many times previously.—G. H. LIVESEY, M. R. C. V. S., Brighton, England, in *The Veterinary News.*

Judging by the interest manifested by our subscribers in the canine department of the journal, it is filling a need. We shall try and make it as practical as possible and invite your assistance.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Addresses of Examining Boards and College Deans

DR. S. STEWART, of Kansas City, the enterprising and energetic president of the Association of Veterinary Faculties and Examining Boards of North America, worked up and presented an excellent program for the meeting of this Association, held in conjunction with the Fiftieth Anniversary Meeting of the American Veterinary Medical Association in New York, September 1st to 5th.

The address of each member of the veterinary medical examining board in each of the states was given in the printed program, as follows:

State Veterinary Examining Boards

ALABAMA—
No Board.

ARIZONA—
No Board.

ARKANSAS—
No Board.

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R. A. ARCHIBALD, Oakland, *President.*
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A great many requests for the addresses of various examining boards are received and the above list should prove useful for those desiring such information. It is right up to date, and changes as made in the personnel of any of the boards will be mentioned in Veterinary Medicine as they occur.

The name of the dean of each of the veterinary colleges included in the association was also given in this program, as follows:

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Cincinnati Veterinary College,
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Iowa State College, Division of Veterinary Medicine,
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Kansas City Veterinary College,
S. Stewart, *Dean.*
Kansas State Agricultural College, Veterinary Department,
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State College of Washingon, Veterinary Department,
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Terre Haute Veterinary College,
C. I. Fleming, *Dean.*
United States College of Veterinary Surgeons,
M. Page Smith, Dean.
University of Pennsylvania, School of Veterinary Medicine,
Louis A. Klein, *Dean.*
University of Toronto, Ontario Veterinary College,
E. A. A. Grange, *Principal.*
Laval University, Department of Veterinary Science,
V. T. Dubigny, *Director.*

A CASE OF NEGLECTED CHOKE

I was called one day to come the next day to see a colt some twelve miles away. I found an emaciated two-year-old affected

with choke. The owner said it had been in that condition for a week. There was a fetid discharge from nostrils and mouth. I attempted to pass the stomach tube and wash obstruction down, this brought some oats out. Then gave arecoline, one grain, and repeated in an hour. Reduced the choke very easily. Passed the stomach tube and washed out the stomach contents, then as the colt attempted to drink and was not able to swallow, I injected through the tube two and a half gallons of water. I never learned the outcome of this case but I am very doubtful if recovery occurred as the owner said he had very little time to treat a colt after it had gone that far.

H. M. HALVERSON, M. D. C.

Yankton, So. Dak.

ARMY VETERINARY LEGISLATION ADVISABLE

In your September issue I noticed an article, by Doctor Waugh, relative to the proposed army legislation. It is a good many years since the doctor left the service, seventeen or eighteen, I believe, a great many changes have taken place in that time. I have been in the service twenty four years and a half, and therefore know the old order as well as the new. The veterinarian is no longer a social outcast, but is as welcome in the homes and at social gatherings of the officers, as any commissioned officer or other gentleman.

All the veterinarians now in the cavalry and artillery, have already passed an examination as to their moral, mental, physical and professional fitness for the service. In Doctor Waugh's time veterinarians were appointed without any examination or any qualification whatsoever, for the duties they were supposed to perform, consequently, not much was expected of them and their position was of like tenor.

Since 1899 all candidates for the position of veterinarian in the army have been required to pass a rigid examination, as to their moral, mental, physical and professional fitness for the position. As to how rigid this is, I refer to the remarks by Dr. Baker on the first page of the September number of the Journal, and to the small percentage of candidates who are successful. The veterinarians now in the army are educated gentlemen and are good representatives of the profession. This being the case they are looked up to and respected in their sphere, but lacking commissions this sphere is very limited, not because they lack fitness but because they lack the authority that goes only with a commission.

All the cavalry officers, with whom I have talked regarding this matter, are very much in favor of the veterinarians being commissioned as they appreciate the great benefit of such a course to the service. Some of the highest ranking officers in the army have favorably endorsed the present bill; in fact it was written under their direction.

The present examination extends over a period of at least six days, and I was informed by one of the recent appointees, that his examination lasted eight days. I think that any man who passes such an examination, is entitled to a commission. The veterinarians in the army are powerless to influence legislation on their behalf and are entirely dependent upon the profession at large for their proper recognition. I fail to see why veterinary science should be placed upon a much lower plane than that of medicine or dentistry. The commissioning of veterinarians will certainly be an advancement for the whole profession in America.

I fail to see where the phrase "beggars shall not be choosers" applies. If persons trying to obtain their just rights and dues are beggars, then I conclude that most people are beggars.

C. D. MCMURDO.

Veterinarian 10th Cavalry.

GENERAL POSTMORTEM LESIONS FOLLOWING LIGHTNING STROKE

Skin very dry and adherent to the subcutaneous tissue, often only unilateral, this makes skinning very difficult.

Mucous membranes of all external openings highly congested.

Rapid decomposition of the carcass.

Kidneys contain the most prominent

lesions. The uriniferous tubes and capillaries are as if shaken apart, and in appearance as if parboiled, slightly bleached. Red-hepatization, of the lungs either unilateral or bi-lateral; pleura congested. Peritoneum congested in places. If a very strong bolt the intestines will also be congested.

Spleen: capsule normal; size normal; the parenchymatous tissue is very soft and nearly black. Liver and bile normal.

A living case might be mistaken for a case of paraplegia or azoturia.

L. S. MICHAEL, M. D. C.

Collinsville, Illinois.

THE SUMMER MEETING OF THE OHIO VALLEY VETERINARY MEDICAL ASSOCIATION*

The summer meeting of the Ohio Valley Veterinary Medical Association was held at New Harmony, Indiana, July 31st and was well attended, about one hundred veterinarians being present.

In the forenoon the members of the Assotion enjoyed an automobile tour through the city and surrounding country, assembling later at the City Hall to listen to an address by ex-congressman Hiatt, on the historical features of the quaint old city.

The business of the meeting was later transacted, including the admission of two new members, and the association adjourned to the home of Dr. J. H. Snyder where an excellent dinner was served.

After dinner the clinics were held. These consisted of horses, mules, cattle, hogs, dogs, cats, and chickens. The operations were performed in the field hospital under canvas and also at the barn on the horse and dog operating tables.

The next meeting of the Association will be held at the Terre Haute Veterinary College, February 1914.

C. T. HOWARD.

Sullivan, Indiana.

AUTO-SEROTHERAPY IN EQUINE PLEURISY

Haan has published (*Revue Gén. dé Méd. Vét.*) an article upon this subject. Auto-serotherapy in sero-fibrinous pleurisy of the horse is not a new therapeutic method, but it seems to be little applied by practitioners.

Haan has obtained such good results with it that he advises all to have recourse to it. Without claiming infallibility for it, he says that it has enabled him to obtain miraculous recoveries in cases that seemed hopeless.

Haan briefly reviews the clinical evolution of pleurisy—complete anorexia, violent fever, and injected mucous membranes. It is only about the fourth or fifth day of the malady that it is possible to discover an effusion and to attempt its puncture. Often the pleurisy only appears later, being a sequence of pneumonia.

The author lays stress upon one sign, which he regards as being of capital importance in diagnosis. This is the behavior of the temperature, which remains stationary and invariable at 39° C. (=102.2° F.) without any fluctuation during the formation of the exudate. The two signs of the temperature and the contracted fascial expression of the animal suffice to establish the diagnosis. The eyes appear to project from the orbits; and the wings of the nostrils show a characteristic see-saw movement, in which the action of the great super-maxillo-nasalis muscle may be distinguished with extreme clearness. This dilatation of the nostrils is totally different from that which is observed in pneumonia. After the appearance of these symptoms, the clinical examination of the chest rarely fails to corroborate the diagnosis of thoracic effusion.

In addition to the classic methods of treatment (caffeine, digitalis, diuretics, vesicatories, etc.) Haan has always practiced thoracentesis followed by auto-serotherapy. He withdraws by puncture as much as possible of the thoracic liquid, and then injects at least 40 c.c. of it into the subcutaneous connective tissue. From the day after this measure there is a sudden amelioration, shown by a return of the appetite and a very distinct fall of the temperature. If necessary, the operation is repeated at the reappearance of the effusion.

By this method, applied early before the

*Delivered at the opening of the Fiftieth Anniversary meeting of the A. V. M. A., New York, September, 1913.

liquid is transformed into pus and before the formation of coagula and of adhesions, it is possible to save nearly two-thirds of the patients. In favorable cases, the resorption of the effusion is complete in from six to ten days.—(*Annales de Méd. Vét.*)

ECZEMA CURED BY BACTERINS

If you think it worth space I am pleased to report twenty-four cases of eczema in the horse with treatment. I refer to the kind which shows up only in the summer time and is seldom if ever seen in cold weather, small nodules form under the skin. In about three or four days these develop into small pustules which then heal by scab. They more often show up on the neck but may cover the whole body, and are accompanied by intense itching.

The treatment was Poly-Bacterins. Four patients required one dose each; two, two doses, fourteen, three doses; and four, four doses each. The dose was repeated every three days for two injections, then every week until the skin was clear and the itching had subsided. I used Abbott's Bacterin but suppose other standard makes would do as well. I used no other treatment, but as I had so few cases would be pleased to hear from others.

LOUIS CHAPMAN, D. V. S.
Perrysburg, Ohio.

TETANUS IN A MILK COW

On July 19th I was called to see a cow which the owner informed me had been acting very strangely all day; he said that he thought she had eaten something that poisoned her.

Upon my arrival the owner gave me a more complete history of the case and it did not take a very complete examination to arrive at a diagnosis of tetanus. She was still able to take a little water and slop. The rigidity of the muscles of the head and neck, the protrusion of membrana nictitans and the stiff straggling gait were all typical symptoms in this case.

This cow had received a deep punctured wound just above the point of the shoulder about three weeks previous which had apparently healed up.

As the animal was not valuable, antitoxin was not used. The cow went down on second day and as her recovery seemed impossible she was destroyed.

G. H. CONN, D. V. M.
Prairie Depot, Ohio.

TETANUS IN A COW

A shorthorn cow belonging to an old German. Ten days after parturition she refused to eat. Had been pastured along the railroad tracks, with no protection.

On examination I found no elevation of temperature, tail extended, eyes glazed, the mouth partly set.

Gave a drench of epsom salts. During the next three days the jaws became firmer. There was no nervousness. She sipped a good deal of water. No treatment was given other than the first drench. As the owner said she would die and he would not spend any money except for a sure cure neither serum nor lobelia was given a trial as I was not a travelling specialist and would not guarantee a cure.

Several old timers advised destruction, so after the animal had sipped a pail of water and was resting quietly, the axe was brought into play and the future meat supply was decreased.

H. M. HALVERSON, M. D. C.
Yankton, So. Dak.

SURGERY FIRST IN TREATING FISTULAS

I want to know from some of the other veterinarians what treatment cured this case.

I think I have been troubled more in the last five years with open joints, fistulas, withers and poll evil than any one.

I was called April 3rd to see a large six-year-old mare with fistula of the withers, both sides, discharging for four months. The owner had used "Fleming's Poll Evil Cure" and blue stone with poor results.

He had lost a son from an operation and no knife for him. I thought of bacterins, used one ampule and he brought the animal

every week for increasing doses, until I had used fifteen ampules in seven treatments, with no change, and no knife to be used yet. I injected Tillates solution and gave him enough for two treatments once every seven days. This produced better results and the discharge was less on one side. I still advised the knife but the owner concluded he would wait awhile. Waited three weeks, opening and discharge becoming less concluded for me to operate.

I probed on right side and found sinus running towards neck, deep in neck muscles. Left probe in sinus and made incision about where I thought end of probe would be, and with exploring needle found probe in sinus. I made opening large enough for drainage and soon had pus discharging from the new opening. In three days the old opening was dry and in ten days healed over. On the twentieth day the case went home and today the 31st the owner came to settle bill, well satisfied, saying that if the M. D.'s knew as much as the D. V. S.'s there would be fewer deaths, etc. He also stated that his animal could eat from the ground, which he hadn't done for seven months.

Now what was the cure, or rather the treatment that caused the cure? Bacterins, caustics or knife? Wouldn't the knife have been the best at first?

WALTER LAWSON.

Hollister, Calif.

THE INTRADERMAL TUBERCULIN TEST

This test is so much more convenient and so far as present knowledge goes, so much more accurate than the old hypodermic test that it deserves hearty support from the owners of cattle.

The test is official in the state of Missouri and is in use by a number of municipalities, including Boulder and Fort Collins. The great advantages lie in the simplicity of the test, only two visits being required, no unusual handling of the cattle and in its applicability to all sorts of cattle wild and tame, and in all kinds of health, as temperature is not a factor in its interpretation. On the other hand it requires special skill, first in the application, asepsis and intradermal introduction of the needle being necessary, and second in the interpretation, as mistakes can easily be made in differentiating a local infection from a true reaction. In spite of these facts the test is worthy of every possible support.—A. W. WHITEHOUSE in *News Notes* published by the Colorado Agricultural College.

ATYPICAL CASE OF HOG CHOLERA

During the early spring and summer months I have had a large number of cases among hogs, showing various symptoms, which to me were indicative of hog cholera.

The clinical symptoms, as I have observed them, have been as follows: anorexia; accelerated respiration; impacted bowels; diarrhea; temperature ranging from normal to 106°F; paraplegia, especially of the posterior parts, although in some cases I have seen them knuckling over on the carpal joints and supporting themselves on their snouts, apparently making very good progress in this manner. These cases usually retain their appetite and make a rapid recovery if treated. Others show subcutaneous hemorrhagic infiltration of the thighs and belly, especially those carrying a high temperature.

In sows that are affected at time of farrowing the pigs are usually still born or die within twelve hours after birth, showing discoloration of the skin of the abdomen, petechial kidneys and hemorrhagic lymphatic glands.

I know of one herd of fifty shoats that show no other symptoms than sloughing of portions of the ears and patches of skin on the back in some cases as large as the two hands.

With the exception of the last case mentioned the disease does not seem to be very infectious, possibly only affecting one or two in the herd and these usually recover if treated symptomatically.

About August 1st of this year I was called to see a sow, weighing about 250 pounds, who had given birth to seven pigs the previous day. I found her lying on her side, breathing rapidly, temperature 104°F and no peristalsis. I diagnosed the condition

as impaction and gave rectal injections and removed some hard, coated feces, gave a physic bolus and left some stimulants to be administered. The next day I was called again and on my arrival found an increase of temperature and discoloration of the abdomen, although the bowels had moved off and there was plenty of peristalsis. I then suggested that we destroy the sow and hold an autopsy, with a view of ascertaining the exact conditions, to which the owner consented. I found hemorrhages in the prepectoral, bronchial, inguinal and mesenteric lymphatic glands, also under the mucus membrane of the cecum and colon. The spleen was hemorrhagic and friable, lungs showed symptoms of pneumonia. I also posted three of the pigs that had died shortly after birth and found petechial kidneys and hemorrhagic lumphatic glands.

Wishing to be sure of my ground, as this was a valuable herd, I took the postmortem specimens and being accompanied by the owner we drove to the agricultural college at Lansing, Michigan and my diagnosis of hog cholera was confirmed by the pathologist of that place.

I have had considerable experience with hog cholera in this section and although the present infection appears to be attenuated and not very communicable I am anticipating considerable loss to the farmers from it during the coming fall.

I might say in conclusion that we are using the simultaneous vaccination here with splendid results as a prophylactic.

B. E. MILLER, D. V. M.

Nashville, Mich.

POSSIBLY TRAUMATIC PERICARDITIS

June 15th I was called to see a cow and found her suffering from impaction of the rumen and nothing more as far as I could see. She was in good flesh and was giving a large flow of milk. I prescribed the regular treatment and apparently relieved the cow, but she did not come back to her feed, preferring spoiled hay, weeds, etc., to good grass or alfalfa.

June 29th I was called again and found her constipated and greatly to my surprise she was very much emaciated. Of course I attributed this to her loss of appetite. On further examination I found her very weak and her breathing was very rapid, short and labored, but upon examination of the lungs I found them normal. Well I was puzzled. I felt sure that I had more than indigestion to deal with, but what it was I did not know. I told the owner that the animal would probably die and I asked permission to hold a postmortem examination in case the cow died and he consented.

July 20th he called me and said the cow was down and could not get up and to come and hold my autopsy, and this is what I found. Dropsy all over the body, possibly six or eight gallons of fluid, impaction of the omasum (third stomach), a large growth on the tricuspid valve of the heart, which was the cause of death. The heart of course was greatly enlarged and walls flabby.

CHAUNCEY E. COOK.

Ada, Ohio.

BARBED WIRE CUTS*

What is more common to the country practitioner, than to get a "hurry up" call to see a horse that has been cut by the wire, and is reported to be bleeding to death? And how many of my fellow practitioners here today have ever read any literature upon this class of serious injuries? All I have ever seen on the subject is a short article written by our distinguished fellow member, Dr. L. A. Merillat who is here today.

In my experience the four regions often injured by wire cuts are:

1. The region of the fore heels.
2. The flexor surface of the hock.
3. The pectoral region.
4. The anterior surface of the forearm.

Of these four, the first two named, are the ones that we have had the most trouble with, especially if the capsular ligiment is cut, which is frequently the case with the anterior part of the hock.

With the fore heel it is different. I have had many cases where it seemed as though the foot was nearly severed from the body,

*Read at a meeting of the Illinois Veterinary Medical Association, Springfield, July, 1913.

and the navicular or sesamoidean capsules would remain uninjured.

The cuts in the pectoral or fore arm region, or in fact in any fleshy part of the body, should not be looked upon with the seriousness as the two previously named.

In the treatment of the cuts around the foot, I will say that after a thorough cleansing and trimming of the parts, that I am a great believer in the "soaking tub." That is, a good clean iron kettle or galvanized bucket filled with any good antiseptic solution. Give a thorough bath for one-half hour twice a day, and apply any good dusting powder between times.

Dealing with the wounds of the hock is a different proposition. The practitioner who can apply a bandage to the part and have it stay any length of time, say twenty-four hours, is in my opinion an adept at the business, for in the majority of cases the animal has a formidable opposition to bandages.

As soon as the bandages are nicely applied, the horse at once opposes them by executing a series of movements with the leg, which are continued until the bandages are disarranged, and more or less damage is done to the wound. Right here I will say that I think eight out of ten of the barbed wire cuts I am called upon to attend are upon young and unbroken horses, ones that resent to a certain degree any kind of treatment whatever.

All things considered though an open-wound treatment I think is best. This consists of trimming the parts, such as removing pieces of loose skin and flesh that are generally found around the cut, removing all dirt and filth, and giving a thorough soaking with bichloride, or any other good antiseptic solution. Then swab the parts with an iodine solution, after which use a good powder and plenty of it. The powder I use and obtain very good results with is one composed of equal parts of boric acid and oxide of zinc. I use practically the same treatment even if the synovial bursae are involved. Although I at once put the animal in slings.

With the wounds of the breast and shoulder we are not so likely to have trouble, as they almost invariably heal well with a little assistance. I do not like the idea of sewing up the wounds, if it can be avoided, as an open wound will do better and can be treated to a greater advantage than a closed one.

I next mention a number of "things I have noticed," in the treatment of wire cuts:

1. Wire cuts do better in the summer than in winter.
2. I have received very little benefit from the use of bacterins in the treatment of wire cuts.
3. If the periosteum is injured the recovery is greatly retarded.
4. Peroxide of hydrogen does more harm than good.
5. All unnecessary digital manipulation should be avoided.
6. Wounds across the face heal more rapidly than in any other part of the body.
7. Rope burns are harder to heal than wire cuts.
8. The majority of wire cuts come after an electrical storm.
9. Wounds do better with a dry dressing than with liquid applications.
10. Bandages as a rule are a hindrance rather than a help toward rapid recovery.
11. The use of slings is very beneficial in the treatment of open joints of all kinds.
12. Ointments of all kinds are filth gatherers.
13. The common barn sponge has no place in the modern wound treatment.
14. And lastly; the teats in cows are practically the only part of her anatomy that becomes injured from barbed wire, and *beware* young man when treating the same.

F. H. Burt, M.D.C.

Chenoa, Ill.

A CHRONIC CASE OF INTESTINAL CATARRH

I was called to see a sorrel mare, four years old, in good condition and heavily in foal, and weighing about one thousand pounds. She had just been purchased by a mill owner, who was going to use her on his delivery wagon for small orders. He asked me what I thought about his pur-

chase and as the work was light I told him I thought she would be alright. This mare had been raised on a farm and never fed much grain, one half-gallon of oats being as much as she had ever eaten at one feed, while pasture and prairie hay were the only stover she had eaten, as we found out later.

After my client had owned this mare about a month I noticed that she was losing flesh and I asked him what he had been doing to her. He said nothing but asked me to examine her teeth. This I did and found them in good condition. I then asked as to the condition of her bowels and was told that they had been badly constipated for a week or two, but now were very loose. I then inquired as to feed and found that she had alfalfa hay and all of the corn chopped she would eat. As she was due to foal in a few days I advised a change of feed, back to oats, about a gallon at a feed, and prairie hay, and await results. I heard no more from the case for about three months, when she was brought to our hospital and I hardly knew her, she was so poor. Her coat was in bad condition, diarrhea was present and she seemed very dull. She had a colt which although fair in flesh did not seem to be thrifty. I advised leaving her for observation and treatment. I suspected worms at this time. On further observation the diarrhea seemed to be constant, pulse normal, lungs normal, temperature 102°F to 103°F, mouth in good condition. There was a marked tendency to eat rough food; she seemed to prefer this to grain. After considering all of these things and consulting with my partner, we diagnosed this condition as chronic intestinal catarrh, due to dietetic mismanagement.

Treatment was first a purge consisting of aloin, three drams, powdered nux vomica, one dram. This was given at night, then she received dram doses of fluid extract nux vomica three times daily and creolin (Pearson) two drams once daily. The feed was one-half gallon of oats and bright prairie hay, and plenty of good fresh water. Improvement was noticeable at once and she was discharged in two weeks with strict instructions as to diet.

She has continued to improve in flesh and bowels remain normal. Her general condition is good now, about two months after discharge from the hospital. The rapid recovery in this case was a surprise to me, as these cases are usually long drawn out. I am inclined to credit the creolin with a share in the good results. However as this is the first case of this kind I have used this drug in and is the quickest recovery from so serious a case I have seen, I am stating the facts in the hope that others will report the results they have observed from this drug in this class of cases.

F. F. MEADS, D. V. M.
Perry, Oklahoma.

FATAL ENTERITIS FROM STRONGYLOGENIC EMBOLISM

I was called to see a sick stallion June 10th and found the following symptoms: Pulse 56; temperature 102°F, breathing slightly accelerated, slight peristalsis, animal lying down most of the time.

History.—This was a four-year-old, Clydesdale stallion, weighing about 1650, not in very good condition; the owner used him for his own mares chiefly, but he was getting so he would not pay much attention to mares when brought there to be bred; and would almost never serve a mare as he should. He had not had the best of care as he was trusted to the hired men. Some days he would be turned out in the lot for exercise and some times would be left in his stall for several days at a time; occasionally he would be taken out for several miles' exercise.

On the morning of the day that he took sick the owner had taken him out several miles and tried some mares. On bringing him back he had led him through the creek and let the horse have all the water that he wanted (the horse was hot at the time). Within a quarter of a mile of home the owner let a boy have charge of the horse; the boy trotted him the rest of the way home, this being about eleven o'clock and at noon the horse was sick and I was called arriving an hour later.

On examination of the scrotum and internal ring I found no strangulated intestine, but the testicles appeared to be

enlarged, and were cold and hard to the touch. I told the owner that the horse had bowel trouble (bowel trouble being a broad term), and was probably caused by drinking too much water while being hot and by the violent exercise. I gave the usual treatment, which consisted of a physic and stimulants, and left medicine to be given at regular intervals during the afternoon.

I saw the horse again at eight in the evening. The pulse was 60; temperature 102.5° F. Other symptoms about the same as at one o'clock; left medicine to be given during the night.

The next morning my patient was standing and had a better appearance, but the pulse was up (70), and the temperature 103.5°F. The owner said that the horse got up at one o'clock and that he appeared better. He did not lay down after this. I left more medicine to be given and gave a questioned prognosis.

At noon the owner telephoned me that the horse was worse. I got out there as soon as I could and found conditions as follows:

Pulse very weak, hardly perceptible; temperature 107°F; breathing fast; peristalsis nil. He would raise his head at times and would look fairly well. I told the owner that there was not much basis for hopes for recovery. Along about two o'clock the stallion began to belch. I gave him rectal injections of cold water to lower the temperature and it seemed to ease him for a little while.

We called Dr. C. C. Mills, of Decatur; he arrived about 3:45 p. m. The horse was getting worse all the time. We gave a capsule of ammonium carbonate and two drams of nux, which eased the belching some. Doctor Mills and I will frankly admit that the case had us up a stump. We gave him rectal injections and finally passed the stomach tube, and washed the stomach with several buckets of water. We left about six o'clock and the horse died about six thirty.

On postmortem examination the next morning, I found the following: On cutting through the abdominal wall an extra amount of a serous fluid run out. There was about one-half pint of cheesy material in the anterior part of the abdominal cavity. The peritoneum was discolored in several places and covered with a fibrinous material. There was a long worm, over twelve inches in length, in the abdominal cavity. I found this worm before any of the intestines were punctured. The small bowel was black and congested; the artery leading to it was in the same shape. The spleen was enlarged. The heart and lungs appeared to be normal. On opening the scrotum, the testicles were small and had about them a layer of serofibrinous material two-thirds of an inch thick.

What killed the horse? How can you account for the presence of that worm in the abdominal cavity? How can you account for the condition of the testicles and was this what caused him to be indifferent toward mares?

T. J. FOSTER.

Monticello, Ill.

A CASE OF LAMINITIS FOLLOWING INDIGESTION

I was called to see a driving horse, taken sick in the morning with what the owner believed was colic, caused by eating new hay with the dew upon it. They treated the horse with home remedies all day—but at 9 p. m. he had become gradually worse so they thought best to call a horse doctor as they expressed it.

When I arrived I found the horse down, lying in the yard simply swimming in sweat, cold and shivering; pulse very weak and when we got him on his feet he could scarcely walk to the barn, so as soon as he got in the stall he laid down very carefully, stretched out all four legs, threw head back as far as possible, laid in this position for a few minutes, then got up, walked around stall several times then laid down again and in a short time he raised himself upon his front feet and as the owner expressed it he sat up on his tail like a dog.

I diagnosed the case as an impaction of the cecum, went after him for this trouble with my treatment, and by 6 a. m. I had the horse on his feet, but he was so stiff in all parts that he could not be moved. We

could not get him out of the stall. I considered it a case of laminitis.

At first I thought I had a case of tetanus on my hands, for we could not force his jaws open enough to insert a dose syringe. We came to the conclusion that the laminitis was sympathetic with the congestion of the colon and cecum so treated for this and was pleased to be able by 7 p. m. of the same day to lead our patient around the barnyard and at present he is doing his share of the work, and his owner informs me that he is better now than ever before, since he owned him.

L. KINGERY.

Bridgewater, S. D.

ABSCESSES IN HAMS

In compliance with the request of Dr. Chedester in the April number of VETERINARY MEDICINE for information relative to the possibilities of the cholera preventative serum treatment causing abscess formation in the hams of swine receiving this treatment I will offer the facts as we have found them in scrutinizing the apparent cause of many peculiar abscesses found in hams.

At one time we observed quite a number of hams containing abscesses largely posterior to the femur and containing, in some instances, a peculiar sero-mucous-like substance of a reddish-brown color while in others the abscesses were apparently typical but of enormous size and thickly encapsulated.

It was thought that these hams had a common origin and upon inquiry it was learned that at least a part were supplied from swine raised at a county institution where they had been subjected to the serum simultaneous method of treatment which was injected on the internal surface of the hams.

It would seem therefore that there can be no doubt that the present procedure used in administering this treatment is responsible, either directly or indirectly, for these abscesses and is the cause of a great economic loss.

Apparently just as efficient action can be obtained from this treatment injected at other points. If this be true, injections could well be made back of the ear and in the axillary region and in the event an abscess resulted it could readily be detected in the process of dressing and would not decrease the value of any high-priced cuts of meat.

I am not prepared to state positively whether it is the serum or the virus or both or neither which causes these abscesses or whether it is the introduction of pus cocci at the point of injections. But from the nature of some of them it seems reasonably certain that either the virus or serum or both are responsible for at least a part of them.

It may be that each one of these probable causes are responsible for certain types of abscesses, in which event a very satisfactory solution would have been found for the fact that some are typical while others are atypical.

From a practical point of view however it is enough to know that some time in the process of applying this treatment the cause of these abscesses is introduced.

This being true every care should be observed by the profession in making their injections at such points as will not detract from the value of the better cuts of meat and at the same time permitting of ready detection in the event an abscess is a sequel.

D. I. SKIDMORE, V. S.

Dayton, Ohio.

A WELL-KNOWN AZOTURIA TREATMENT

June 21st I was called to see a very heavy draft horse suffering from azoturia. I will not give symptoms or causes as they are too well known. The horse was down and we had to pull him to the barn on stone boat; to say he was a sad subject is not justice. I went after him with my new treatment for this trouble and in sixty hours we had the horse in harness and the owner tells me he is so frisky that he can hardly hold him.

Little did I think in 1909 when I gave to P. D. & Co., the Mulford Co., and the *Veterinarian* of Detroit, my remedy for azoturia and paturent paresis, that I would have hundreds of letters to answer asking

for my treatment. These letters have come from nearly every state in the Union, Canada, Australia and England, the latest I have seems to be almost a specific for azoturia and while it may not be in accordance with scientific teachings as laid down by the high ones of the great colleges, yet it does the business and gives results and I find that if a veterinarian saves his patients he gains the respect of his clients. Results are what I am after not theories.

In conclusion I consider the AMERICAN JOURNAL OF VETERINARY MEDICINE the leader in the advancement of veterinary science. Its editor is untiring in his efforts to give its readers the best and most up-to-date articles, and he is doing it to the Queen's delight. Long live the VETERINARY MEDICINE and its efficient editor is the wish of the old man.

DR. L. KINGERY, V. S.

Bridgewater, S. D.

COTTON AND CREOGEN-MARTIN 111 DAYS IN COLD ABSCESS

A wholesale liquor dealer called me to Carnegie, March 24th, 1906, to treat a sixteen-hundred-pound bay gelding suffering from a very large cold abscess affecting one shoulder.

Treatment.—Large incision through tissues into abscess, which was evacuated and cavity cleaned with suitable lotion, then well packed with cotton saturated with Creogen-Martin. It was my custom at this time to devote five days each week teaching veterinary science at West Virginia University, and Saturday and Sunday in general practice at home. Hence this case was left in charge of another veterinarian who cared for the practice during my absence and he was advised fully how to treat it. He made three visits thereafter and never laid his hands on the patient but made out a bill on a prescription blank and collected twelve dollars for services; also advised me that the case terminated favorably and satisfactorily. However, I happened to be again in that locality on July 10th and soon learned that the owner was very angry with me because of the way he had been treated and the horse neglected. Mutual explanations followed and made matters satisfactory. We cast and secured the horse on the morning of the 11th and enlarged the original wound and removed the retained cotton and accumulated debris; removed the indurated edges of the old wound; flushed the cavity with an antiseptic lotion and removed restraint. The wound was dressed twice daily with warm water and soap, the old-fashioned white lotion injected, supplemented with Squibb's surgical dressing powder. Result, recovery and returned to his usual work, which was followed for several years.

JAMES WAUGH, V. S., D. V. S.

Pittsburg, Pa.

A BARBED WIRE CUT WELL—CARED FOR BY NATURE

On July 16th I was called to see a steer that had a stream of water passing from the scrotum. On examination I found that the steer had received a supposed-to-be barb wire cut along the right side of the scrotum, which had all healed up, except a small hole where the urine was passing at regular intervals.

The anterior end of the penis had degenerated until it could hardly be found. From the looks of the wound I should say it had been made about three weeks previously.

The steer is fat; eats well and moves around as if nothing had happened.

CHAS. E. PALMER.

Rising Sun, Indiana.

LACERATION OF THE PERINEUM AND RECTO-VAGINAL SEPTUM

A farmer and stockman called me in April, 1910, to see a seventeen-hundred-pound Belgian mare, aged seven years; delivered of full time but dead foal during the preceding night. Owner was on the alert and heard noises in the barn about one a. m., investigated and found this large mare in labor pain; called his sons, who responded with lanterns, but the delivery was so rapid that they had no time to make observations or offer any assistance; however, they later observed hemorrhage and found con-

ditions alarming and serious, requiring professional services without delay.

I found complete laceration of the perineum and recto-vaginal septum forward about ten inches. We led the mare three miles to Carnegie, then secured her in a strong set of blacksmith's shoeing-stocks, administered a drench of twelve drams of chloral hydrate dissolved in a quart of warm water; dressed the injured parts with a mild antiseptic solution; and with the assistance of Dr. N. Atorthy I sutured the injured parts into apposition as nearly as possible with strong interrupted sutures; released patient and tied her short in a stable to prevent recumbency. She was fed sloppy bran mashes well salted and water was given freely; injection pump used and wounds dressed morning and evening. However, the sutures broke out seemingly one at a time and were all torn loose in seven days. The suturing was repeated the same way, and the mare was returned home to the farm, where I hoped they could give her more attention and better treatment; yet the results were the same in about ten days; then similar treatment was repeated in a recumbent position confined with Conkey casting-harness. Failure again resulted in about two weeks and similar treatment was reapplied without gaining any satisfactory results. Finally the owner returned the mare to her accustomed farm and teaming work, hauling coal and other oil and gas-well supplies in a hilly country. The owner is still using the mare the same way.

I had seen Dean Cary and Prof. McAdory of College of Veterinary Medicine, Alabama Polytechnic Institute, fail with a similar case in a twelve-year-old eight-hundred-pound mare during mid-winter, 1909-10, when I was teaching in Alabama; and learned that they had operated early in the preceding June on this mare, which had been injured in parturition in March or April and the edges of the wound had recovered without treatment at that time. She was later returned to her owner near Montgomery, Alabama, uncured, but proved an interesting and instructive case for our two hundred agricultural and veterinary students. We consulted all available surgical and obstetrical literature without obtaining much useful information; and even Prof. W. L. Williams admits his failure in treatment as well as in finding personally any other veterinarian who had been successful in treating similar cases. It is my candid opinion based on considerable experience and observation that suturing fails to correct and cure these unusual obstetrical accidents and injuries in our large domestic animals, and I have been considering the feasibility of devising some sort of clamp forceps with teeth or tines like those on pronged forceps used by medical practitioners in their gynecological practice and will be pleased to hear from other veterinarians who may be able to offer advice and suggestions that may result in something tangible and useful.

JAMES WAUGH, V. S., D. V. S.
Pittsburg, Pa.

DEATH FROM BUMBLEBEE STING

A peculiar incident happened the other day. A cat was playing with a bumblebee and was seen to drop it from its mouth suddenly and then rub its mouth. In a few minutes its tongue became edematous, protruded from the mouth, and the cat died from suffocation. All this took place in about fifteen minutes. He had evidently been stung on the tongue and the ensuing swelling closed the pharynx.

A. C. WIGHT, D. V. M.
Pittsburg, Pa.

ANTITOXIN INTRAVENOUSLY FOR TETANUS

Tetanus has been very intersting to me. I will relate some of the things that I have noticed and hope to hear if others have had like experience. The first year I was out of school I was prejudiced against the use of antitoxin and did not use it. I lost about fifty percent of my cases of tetanus. The second year I began using the antitoxin and found that my percentage of recoveries ran up to about eighty to eighty-five.

I use the antitoxin intravenously and usually start with 9,000 units; as a general thing the temperature begins to recede in

a few hours and by watching the animal closely it can be determined whether or not more will be needed. The temperature and tension of the muscles must be watched; for instance if there is a gradual decrease in the severity of the symptoms for two or three days after the initial dose, then they begin getting worse, I immediately inject more of the antitoxin. If the animal is a valuable one, or in any case if the owner is willing to stand the expense, I inject intravenously from 1500 to 3000 units every twelve hours after first dose until temperature changes for the better. But in case the symptoms have grown exceedingly serious in a few hours I do not advise this treatment. I think giving the antitoxin in sufficient dosage to counterbalance the poison until the animal itself manufactures enough antitoxin to overcome the remainder, is the sum and substance of the whole thing.

Swing the animal in all cases and study its nature, how best to keep it quiet. If he will stand better with his mate, allow them to stand together and darken the stable, but the main idea is to keep him quiet. I generally use sodium bromide as that never irritates the stomach. Put it in the drinking water and don't drench him by any means. Keep the neighbors out and let only one person attend to the animal. Use feed that will keep the bowels loose and have drinking water by him constantly.

Tetanus in my experience has occurred on one farm year after year and adjoining farms never have it. One locality especially had a large number of cases and in the country for ten miles around there were no cases. On my father's farm during the last fifteen years there has been ten cases of tetanus. The first cases were fatal, but each year the symptoms have been less serious until they are just bad enough now to enable one to diagnose the case.

G. D. C.

Illinois.

RECOVERY FROM A PECULIAR CASE OF ACUTE INDIGESTION

During the fall of 1912 while the "horse disease" in Kansas was raging I had a number of cases in which symptoms were similar. I will describe one case that recovered.

This mare was driven to town, the owner noticing during the last two miles that the animal was lagging back; she was generally very ambitious. On offering her feed she ate and he said nothing to me until he was ready to go home when he found her pulling on the halter and he could not lead her without a great deal of difficulty. I at once told the owner she would not be able to go home and she was led between two horses with saddles and placed in a box stall. As soon as I saw the animal I gave her one grain of arecoline and followed in forty minutes with another, getting good action.

On putting this mare into the box stall she immediately began biting the stall and would put her head against it and push for hours. She would take crazy spells, rearing up and getting her feet over manger and stall door, sometimes getting her head under the manger and pushing for hours, then standing stupid half a day. She did not willingly eat or drink anything for ten days and she had no natural passage from the bowels for that period of time. Each alternate day she was given one-half grain of arecoline, at first with strychnine but this seemed to bring on the spells, so the strychnine was stopped.

The passages were foul-smelling, mushy, and a very pale color. The temperature at no time was higher than 102.5°F. It was possible to hold her head high and drench her with water and oat-meal gruel enough to keep her alive. Turpentine would quiet her and large doses were given often during the period in which the animal was crazy. No serious results followed its use. The first five days ice in a sack was tied to her mane and halter and replaced as often as the ice melted.

On the tenth day I cut an apple and put it between her teeth and got her to eat part of it. The next day she ate a handful of bran and salt and drank a little water. For a few days apples were her principal diet, until she began eating gradually and was herself again. She was very poor but regained flesh soon and was taken home. She is now working and has been since the early spring, after her sickness. G. D. C.

Illinois.

Newspaper Comment—Personal Mention

DYSON HEADS THE VETERINARY DEPARTMENT IN ILLINOIS

Dr. O. E. Dyson has been appointed state veterinarian of Illinois to succeed Dr. J. M. Wright.

Doctor Dyson is a native of Illinois and a graduate of the Chicago Veterinary College in 1891. He practiced for two years in Rushville, Illinois and then entered the Government service when J. Sterling Morton was secretary of agriculture. After various promotions he was finally made inspector in charge at the Union Stock Yards in Chicago, the most important position of its kind in the Bureau of Animal Industry. This position he held for five years and in 1906 he resigned it to accept the appointment as consulting veterinarian for the various packing industries located in Chicago. This position he held up until a few months ago when he resigned to engage in special work for the Medical Milk Commission of this city.

Doctor Dyson's long experience in the packing houses in various parts of the country and as consulting veterinarian for all of the packers has given him a vast amount of information as to the location and extent of tuberculosis and other contagious diseases. Probably no other person possesses an equal amount of statistical knowledge concerning tuberculosis in cattle.

The Hon. E. J. Shanley of Ottawa and Dr. R. F. Brown of Galesburg are the new majority members of the Illinois Live Stock Commission. It is expected that Commissioner Russell will hold over as minority member of the Board.

The state veterinarian and the Live Stock Commission of Illinois are in a particularly difficult position at this time, owing to the quarantine which many states have established against Illinois cattle. It is not considered probable that any change will be made in the State Biological Laboratories, of which Dr. A. T. Peters is the head and Dr. H. R. Schwarze, assistant.

A NEW STATE VETERINARIAN FOR MICHIGAN

The livestock laws of Michigan were greatly changed by the recent legislature. The Hon. H. H. Hines, for twenty-six years a member of the Live Stock Commission, has been succeeded by Martin Stapleton of Emmett, and a vacancy on the Board has been filled by W. R. Harper of Middleton, who becomes secretary of the Board. Mr. Harper is secretary of the Holstein Friesian Association, the State Fair Association, and various other livestock organizations. Hon. H. H. Holliday is president of the Board.

The law providing for the appointment of State Veterinarian was so amended by the recent legislature that the Governor must make this appointment on the recommendation of the Board, thus taking the office out of politics.

The Live Stock Commission has prevailed upon Dr. G. W. Dumphy, many

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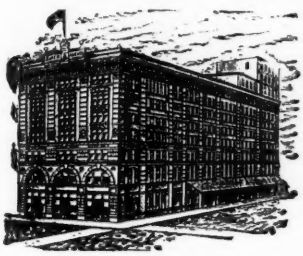

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years ago state veterinarian of Michigan, and during the past eight years chief veterinarian for Parke, Davis & Company, to accept the position of state veterinarian.

Dr. Ward Giltner, formerly state veterinarian, has been appointed pathologist and bacteriologist to the State Agricultural College and the State Agricultural Experiment station. Dr. E. T. Hallman, assistant to Doctor Giltner in the Experiment station has been appointed pathologist to the Commission with his laboratory and office at the Michigan Agricultural College. Livestock sanitary conditions and the administration of the livestock laws in Michigan are very satisfactory to the veterinary profession of that state.

MY DOG'S GONE

What d'ye mean, you lost your dog?
That's what they ask in a flippant way—
But it means that my heart is like a log
And I mope and worry the whole long day;
It means that my eyes are sort of dim
And my life, somehow, has jumped a cog.
He was only a mutt—but I'm fond of him
That's what I mean, I lost my dog.

He was always hanging about the place
Ready to follow me where I went,

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With a look of love in his funny face,
And his brown ears cocked in a way intent.
It was second nature to have him near,
To have him close at my heels to jog.
And without him the world seems lone and queer,
That's what I mean, I lost my dog.

So if you have seen my lonely pet
I wish you would tell me where he may be
For I pine and murmur and chafe and fret
For my silent comrade to come to me.
A dog just cuddles down in your heart.
And you wander about in a dreary fog,
When he's lost and gone—and the tear drops start,
That's what I mean, I lost my dog.
—W. T. DELIHANT, Riverside, Ill., in *The Day Book*, June 23, 1913.

HISTORY REPEATS ITSELF

Dr. Samuel Sheldon, state veterinarian of Missouri during the past two years, has resigned his position to take up the work in the Interstate Serum Company in St. Louis. Dr. D. F. Luckey, Bloomfield has been appointed to fill the vacancy left by Doctor Sheldon. Doctor Luckey, it will be remembered, was Doctor Sheldon's predecessor in the office of state veterinarian and he now becomes his successor also.

Similar conditions obtain in Oklahoma, where only recently Dr. Ben Dobkins was

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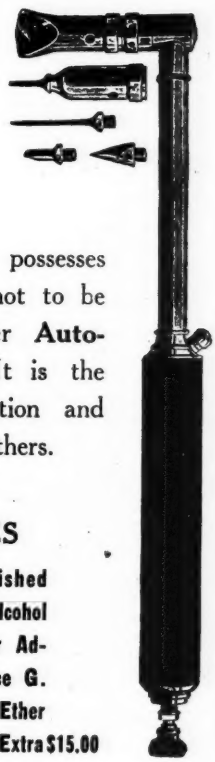

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The remarkable success attending the use of Emphysema Compound is indicative of its value in your practice. When a short treatment offers possibilities of increasing a horse's value from twenty dollars to two-hundred dollars at a small cost it is worth your while to investigate it.

Our Emphysema Compound is easily given (not hypodermically), inexpensive, and as a cure it is nineteen-twentieths sure.

Write today for descriptive literature and case reports; better still, order sufficient to treat one or two of the "heavey" ones in your locality where you can watch results.

Price

Per dozen bottles (100 tablets each) $27.50. In less than half-dozen quantities, per bottle $2.75. Money back if not pleased.

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appointed state veterinarian to fill the vacancy caused by the resignation of Dr. J. Kelly Callicotte. Doctor Dobkins has just resigned from the office and Doctor Callicotte has been selected as his successor.

DR. ELDON SMITH, city milk inspector of Grand Rapids, Michigan, has induced the police judge to raise the fines for violating the milk ordinance from $3.00 to $10.00 and costs.

—

"WHEN the lameness is not in the foot," says Dr. A. S. Alexander, in the *Philadelphia Farm Journal*, "we must look higher for it."

—

DR. C. G. COLE, veterinarian in the Bureau of Animal Industry, has been assigned to work at Ames, Iowa, where he will be superintendent in charge of the serum plant of the State Agricultural Experiment Station.

—

DR. BERNARD W. MURPHY has been placed in charge of the hog cholera eradication work, undertaken by the Bureau of Animal Industry in Pettis County, Missouri. Doctor Murphy is stationed at Sedalia, Missouri.

—

Dr. A. Bostrom has been removed from the office of State Veterinarian of Nebraska with the change in administration and Dr. L. C. Kigin of Lincoln, appointed to fill the vacancy. Dr. Kigin is a recent graduate of the Indianapolis Veterinary College and has practiced in Nebraska one year. At the recent session of the legislature the salary of the state veterinarian was increased from $1800 to $2400 per year. Doctor Bostrom has been retained by the Stallion Registration Board as chief stallion inspector at a salary of $2000 per year.

—

DR. KARL F. MEYER, for three years pathologist of the veterinary department of the University of Pennsylvania and director of the laboratories of the live stock sanitary board, has resigned to accept the position of professor of bacteriology and protozoology in the University of California. Doctor Meyer came to this country from the Transvaal where he was in the employ of the English Government as pathologist to the Department of Agriculture. Dr. James B. Hardenbaugh, formerly assistant to Doctor Meyer in the University of Pennsylvania has succeeded the place vacated by him.

—

DR. KURT SCHERN of the German Imperial Board of Health, Berlin, has been appointed special investigator of diseases in Iowa under the direction of the veterinary division of the Iowa State College. This appointment was made under the recommendation of Professor Robert Ostertag. Dr. Kirk W. Stouder, formerly veterinarian to the Kansas live stock commission has been secured by the Iowa State College to carry on extension work among the farmers of the state. His work will be wholly educational.

—

DR. CHARLES E. LIPI, professor of comparative physiology in the veterinary department of the Minnesota State Agricultural College, has been elected head of the veterinary department of the South Dakota Agricultural College at Brookings.

POLYVALENT CALF DYSENTERY SERUM

AND

GERM FREE DYSENTERIC BACILLI EXTRACT

are two exceedingly valuable products in the prevention and treatment of

Calf Dysentery (White Scours)

prevalent to so great an extent in valuable dairy herds.

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Pulmonary Emphysema.

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Vergotinine has been used very successfully in America for several years in the treatment of the above referred to conditions by a large number of veterinarians.

Further particulars furnished on request

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—

DR. C. H. STANGE, dean of the veterinary department of the Iowa State College and director of the new state serum laboratories is authority for the statement that it would require twenty serum plants, all larger than the state plant at Ames to supply the demand for anti-hog-cholera serum in Iowa.

—

BECAUSE of ill health and financial reverses Abraham Knapp, fifty years old, and a veterinary surgeon, committed suicide by hanging in a barn at the rear of his home in Davenport, Iowa, August 14th.

—

AFTER more than a quarter of a century of active practice Doctor Brodie of Cedar Falls, Iowa, has relinquished his practice to Drs. Cox and Weisbard, recent graduates of the Chicago Veterinary College.

—

W. B. Howley, a veterinarian of Champaign, Illinois, committed suicide at his home August 22nd.

—

DR. H. F. STEVENS, of Denison, Texas, has recently installed one of the Conkey operating tables and received a fine write-up in his home paper.

—

THE United Veterinary Company of Pine Bluffs, Arkansas, has been incorporated with a capital stock of $25,000.

—

DR. CAROLINE S. RUTH-MAHER, proprietor of a sanitarium at Lansdale, Pennsylvania, has sued her husband, Dr. John J. Maher, a veterinarian,

THE INDIANA VETERINARY COLLEGE
SESSIONS BEGIN IN SEPTEMBER
Practical course in Veterinary Science. Catalogue on request.
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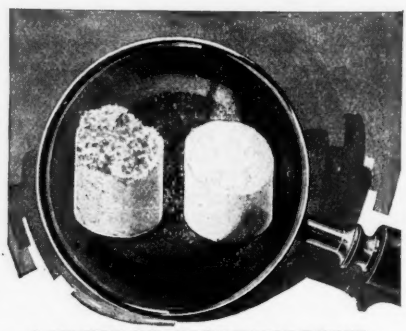

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Size and shape most convenient

Made in all standard medications and furnished at moderate prices. You will eventually use them *since* you are looking the best, why not order now? Our process of making originated with us.

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for divorce, naming Miss Rebecca Busch, a former client of the doctor, as correspondent.

—

DR. MARK FRANCIS, head of the veterinary department of the Texas Agricultural and Mechanical College has appealed to the board of directors to seek aid from the legislature for the establishment of a school of veterinary medicine at College Station and the erection of a suitable building. An appropriation of $150,000 has been asked for and it is expected that the school term of 1914-15 will be opened with the school of veterinary medicine established.

—

DR. J. B. ARTHUR of Russellville, Arkansas, has been appointed a member of the faculty of the Arkansas Agricultural College at Fayetteville. Doctor Arthur will teach veterinary surgery and obstetrics and also military tactics.

—

JAMES BURNETT was fined $20 recently at Richmond, Virginia, for practicing veterinary medicine without a license.

—

THE Iowa State Veterinary Medical Association will hold its annual meeting at Council Bluffs, October 1 to 3. Dr. D. H. Miller of Council Bluffs, is president and Dr. C. H. Stange, Ames, is secretary.

—

DR. C. C. WARN of Dodgeville, Wisconsin, a graduate of the McKillip Veterinary College in 1911, received a painful injury recently when a horse to which he was administering a hypodermic injection jumped and caused the hypodermic

VETERINARY COLLEGE

***of the* ALABAMA POLYTECHNIC INSTITUTE, AUBURN, ALA.**

Course: Three Years of Nine Months Each

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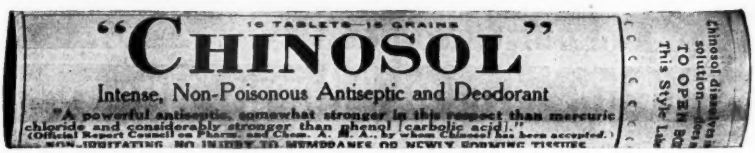
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Intense, Non-Poisonous Antiseptic and Deodorant
"A powerful antiseptic, somewhat stronger in this respect than mercuric chloride and considerably stronger than phenol (carbolic acid)."
(Official Report Council on Pharm. and Chem. A. M. A., by whom Chinosol has been accepted.)
NON-IRRITATING. NO INJURY TO MEMBRANES OR NEWLY FORMING TISSUES
Chinosol dissolves in water
TO OPEN

DIRECTIONS

Dissolve one tablet Chinosol in one pint of hot water.
Place the animal on its side, hold the ear open wide, fill the ear to the rim with this solution. Hold the animal still for thirty seconds, then let it get up.
Then treat the other ear in a similar manner.
The disagreeable odor is instantly destroyed and if this performance is repeated two days in succession, the result will speak for itself.
No damage whatever to the animal.

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needle to penetrate one of the bones of his forearm. It was necessary to take Dr. Warn to a hospital for the removal of the needle which was broken off beneath the surface of the arm.

THE WORKING CONTINGENT

A feature of the annual meetings of the A. V. M. A. meeting which is becoming more noticeable each year is the exhibits of the various manufacturers of instruments, drugs, biologic products, etc. The following firms were among those represented: Parke Davis & Co., Sharp & Smith, Haussmann & Dunn Co., Cutter Laboratory of Illinois, Pasteur Laboratories of America, Pitman-Meyers Company, Schieffelin & Co., Alex. Eger, W. B. Saunders Company, and Bennett Biscuit Co. To show how really important these meetings are becoming to them, two or three men were sent as representatives of most of the firms, where in past years one was deemed sufficient.

The displays were the finest ever made and to describe them all in their beauty and elaborateness would take columns.

THE "WORKING" CONTINGENT OF THE A. V. M. A.

From the reader's left to right: Fred Christianson, Manager Veterinary Department, Sharp & Smith; Christopher Shaughnessy, Haussmann & Dunn Co.; Eddie Sowatkin, J. P. Thiry, Cutter Laboratory of Illinois; Marvin Whitten, Sharp & Smith; J. P. Dunn, Haussmann & Dunn Co., and Julius Mork, Sharp & Smith.

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It's the *classiest* and most *substantially built* Storm Buggy that *anyone* ever made, and it's the buggy that absolutely protects your health at all times. Just what you've wanted for those *cold weather drives—ride in comfort* without being all bundled up. Escape biting winds, rain, snow and sleet. Avoid colds—frosted ears. Keep warm, snug, dry, *always.*

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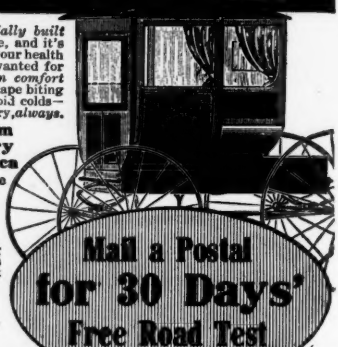

Mail a Postal for 30 Days' Free Road Test

Hard steady work by the various commercial representatives of course is the prime consideration, but the editor came across a post-card photo showing the "Old Timers" in a different attitude. "Joy riding to Coney Island" might well be the title of this picture. From what we can learn quite a bit of fun and relaxation was experienced by those participating.

DR. F. A. BARKER of Toledo has located at Bowling Green, Iowa, where he will take up the practice of Dr. Paul Walker who is doing state work in North Dakota.

DR. C. C. PALMER who was formerly engaged in practice at Pleasant Hill, Ohio, has been appointed assistant professor of veterinary science in the University of Minnesota.

DR. A. C. REDMON, formerly of Hillsboro, has moved to Covington, Indiana, where he has gone into partnership with his brother, Dr. Joe Redmon.

DR. J. FORD MEINZER, a veterinarian of La Jara, Colorado, and Miss Clara Meinzer of the same place were married recently in Pueblo.

DR. H. L. SIMPSON of Macomb, Illinois, has dissolved partnership with Dr. A. P. McKee and will go to California to continue the practice of his profession there.

DR. GEO. CHRISMAN has resigned his position with the North Carolina Department of Agriculture to accept an appointment at Blacksburg, Virginia.

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2 DOLLARS A MONTH

Buys a Genuine Standard

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When the typewriter arrives, deposit with the express agent $8.80 and take the typewriter three days and try it. If you find it to be the best typewriter you ever saw, satisfactory in every respect, keep it and send us $2.00 each month, until our special price of $28.80 is paid. If you don't want to keep it, return it to the express agent, and he will give you back your $8.80, and return the typewriter to us. We will pay the return express charges.

You won't want to send this machine back after you have seen it and tried it. You can't imagine the perfection of these machines till you see one, and the price is $71.20 **less than the catalogue price,** and it is guaranteed just as if you paid $100.00.

Perfect machines only, complete outfit, nothing extra to buy, no strings of any kind to this offer. Just think of buying such a typewriter for $8.80 down and $2.00 a month. Cash price $27.40. Thousands of people have paid $100.00 cash for Smith-Premiers. **It's standard,** by many considered the best typewriter ever built. A key for each character, so each character is always the same, a type brush for cleaning the type built into the machine; the tilting carriage throws all previous writing instantly in sight, comes to you with tools, complete operating instructions, rubber cover, everything ready. It runs beautifully. It's wonderfully simple and strong. It will last a lifetime. I sold a similar supply of these beautiful machines about a year ago to everybody's satisfaction.

Only 200 orders will be filled on this offer. Act today to be sure

This coupon states the terms. Fill it out, send it now, today. You can't loose, and it's the greatest economical typewriter opportunity you will ever have.

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Ship me a No. 2 Smith-Premier f. o. b. Chicago, as described in this advertisement. I will pay you the $20.00 balance of the SPECIAL $8.80 purchase price, at the rate of $2.00 per month. The title to remain in you until fully paid for. It is understood that I have three days in which to examine and try the typewriter. If I choose not to keep it I will carefully repack it and return it to the express agent. It is understood that you give the standard guarantee for one year.

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For corns on horses feet. Moisten to a paste Sulphur with sulphuric acid, apply to corn and cover with cotton. Remove in twelve hours, pare away the black crust caused by its action and reapply a fresh paste, three or four applications will eat out the corn without causing soreness.

Lump clay thrown into a pail and covered with water to soften. When like putty, pack the feet, cover with paper to protect from dirt and straw. Can be removed and thrown back in the pail and used repeatedly. Good for softening the feet.

J. H. Dedrick, V. S.

Modoc, Ind.

HORSE BREEDING WITH CAPSULES

By Frank B. Graham, Kansas City, Mo.

There is probably not a farmer in the country but what actually knows of a colt that was produced by the capsule system or by an "impregnator." The fact that colts were produced by artificial insemination has caused breeders to experiment until now they have a very reliable method of artificial breeding. The successful method is the capsule system. A mare is served by a stallion and the semen is taken from the mare with an extractor which has a soft metallic point. This point can be bent in a position so that the semen can be taken either from the vagina or the womb. The extractor is then immersed in warm water at 100 degrees. Using this semen additional mares are bred with capsules, by filling (for each mare) a specially pointed breeding capsule half full and inserting it into the womb, where it dissolves.

The average discharge of a stallion is about eight ounces of fluid. One drop of fertile semen contains countless numbers of spermatozoa. When viewed

NOTICE—THE FIRM KNOWN AS THE KANSAS City Serum Company was dissolved August 20th and henceforth the antihog-cholera serum manufactured by Dr. J. H. Oesterhaus, formerly of this firm, will be sold under the name of "The Big O Serum Company," with offices at 465 Live Stock Exchange Building, Kansas City, Missouri.

Doctor Oesterhaus thanks his many friends for their patronage in the past and assures them that the serum he supplies will continue to be of the uniform, high standard which it has always heretofore maintained.

THE DOG FANCIER—THE OLDEST, MOST PROSperous and popular monthly kennel publication in America. Covers all breeds. Price 50 cents a year. Send subscriptions to Veterinary Medicine.

THE COCKER SPANIEL—THIS BOOK GIVES VALuable information as to their care, breeding, training, etc., and will apply to nearly all breeds of medium-sized dogs. Illustrated by Eugene Glass, editor of the Dog Fancier. Price, postpaid, 50 cents. Send orders to Veterinary Medicine.

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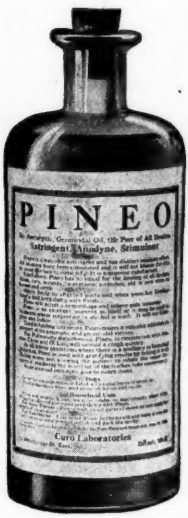

I am delighted to find a product possessing such virtues. Ship a gallon at once.—Dr. T. B. J., Kans.

I find Pineo the greatest healer I have ever used, also good results in Coughs.—Dr. H. G. G., Ala.

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Pineo great for Coughs. I also like it as a healer.—Dr. H. P., Mich.

Pineo is worthy of all you claim. Put me down as one of your customers.—Dr. H. L. B., Pa.

The therapeutic action of Pineo is a daily surprise to me. I will not be without it.—Dr. M. R. H., Mich.

I have recommended Pineo to my friends.—Dr. A. M. H., Ill.

Am nearly out of Pineo. You can not say enough for it. Send 5 gallons via freight or express.—Dr. W. C. McM., N. C.

Sample of Pineo received and have tried it on wire cuts. You may expect order soon.—Dr. R. L. B., N. D.

I have used Pineo in several ways and like it fine.—Dr. J. V., Mich.

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Ship one gallon of Pineo P. D. Q.—Dr. D., Mich.

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Ship one gallon of Pineo at once. Sample satisfactory.—Dr. G. B. S., Pa.

Ship gallon of Pineo at once.—Dr. G. H., N. Y.

Have tried Pineo to my own satisfaction and intend to use it in future.—Dr. F. G., Mich.

Pineo is a great product. It may be used in so many ways.—Dr. E. C., Mich.

I am more than satisfied with Pineo. It is giving perfect satisfaction.—Dr. A. F. M., Kas.

Pineo is fine and proves to be all you claim for it. I have also used your other preparations and they are O. K.—Dr. A. H. B., Ohio.

Pineo is a great healer.—Dr. M. Y., Texas.

The many uses and results from Pineo is most gratifying.—Dr. T. J. S., Ill.

The results from Pineo have been very satisfactory.—Dr. W. M. S., Ida.

Pineo is great. There is no limit to its uses.—Dr. E. Q. W., Ill.

Pineo is working fine. Your Germisol is the best antiseptic I have ever used.—Dr. E. W. W., Pa.

In my 30 years' experience I have never used anything so satisfactory as Pineo. If your other specialties are as good I will send you a large order.—Dr. C. A. B., Ohio.

Pineo is satisfactory.—Dr. R. F., Conn.

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Pineo doing very satisfactory work.—Dr. W. A. M., Vt.

I like Pineo fine.—Dr. P. C., Tenn.

Pineo is all you claim.—Dr. C. E. B., Kans.

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I find Pineo great for all sores, cuts and bruises. The more I use it the better I like it.—Dr. M. J. H., Ill.

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Pineo is the finest healer I have ever used.—Dr. G., Ida.

So far as I have used Pineo I like it.—Dr. H., Wash.

Pineo is just what I have been looking for. Will order soon.—Dr. T. V. F., Mo.

Pineo is all you claim for it. It has given good results.—Dr. C. H., Ala.

What I have used of Pineo is very satisfactory.—Dr. W. E. DeH., S. C.

Pineo is all you claim and will continue to use it in my practice.—Dr. W. F. E., Texas.

Pineo is O. K.—Dr. C. H. F., Mich.

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I have used Pineo in several ways and it has always proven satisfactory.—Dr. J. W. J., Tenn.

I find Pineo good in colic and very fine in liniments.—Dr. S. R. G., Tenn.

There is nothing better for healing than Pineo.—Dr. B. S. J., Ark.

I find Pineo excellent in every case that I have used it.—Dr. J. A. D., Mo.

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FREE TRIAL COUPON.

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Enclosed find 16 cents in postage for which kindly mail me, without obligation, 12-oz. sample of Pineo.

Signed.....

P. O.....

State.....

with a microscope these look like wiggle tails. Only one of these is used in fertilizing a mare; the balance are all wasted.

There is nothing mysterious about this method of breeding. If a breeder keeps the semen at the right temperature, and is clean with his work and has the proper instruments, it is much surer than the natural service. When the capsule system is employed it is not necessary that a stallion make more than one service a day to breed a dozen mares a day. Two services one day and one the next is the limit for an average mature stallion. Stallions or jacks that are required to make more services than that are frequently injured. A stallion may make an apparently satisfactory service and discharge semen that does not contain spermatoza, when he has been used too frequently. If there are no spermatoza in the semen the mare cannot get in foal. An excess of services is injurious to the stallion and a waste of time to the mare owners. When a stallion only makes one service a day he will discharge live spermatozoa at nearly every service. The semen is stronger and the colts are stronger, as a rule. Many capsule breeders are now insuring the colts to stand and suck for thirty days. They have also learned that they can stand their best stallions as cheap as a scrub stallion's price, because they can breed so many more mares. If a stallion can breed ten mares with the capsule system in one day, how cheap can the owner make the price to the farmer? These capsule breeders are finding that this method of breeding is very profitable and this makes it possible for them to buy the best stallions obtainable.

Several hundred stallions have been purchased the last few months at prices averaging above $2,500 each. Perhaps the highest priced stallion purchased for this method of breeding was the champion Belgian stallion of the International Live Stock in 1911 and 1912, bought by M. A. McMahan of Jerseyville, Ill., from J. Crouch & Sons.

This method of breeding is not an experiment; it has been thoroughly tried and has proven an absolute success when properly handled. A great many breeders are now producing from 200 to 300 colts from a single sire during one season, making only one service a day.

Mare owners are greatly in favor of this method when they understand it. The breeder usually advertises to make a service at a certain hour so that all the mares can be ready at that time and avoid delay. It is not necessary to make other dates, as a large number of mares can be bred from one service. But the important thing that interests mare owners is that about 40 per cent of the shy breeding mares of a breeding age can be made producers with the capsule system. Mares having colts at their side should, for the best results, be bred with capsules from the seventh to the ninth day, without being teased. Mares having a closed or mal-formed cervix can be made producers, as a rule, only with some assistance. If the spermatozoa does not enter the uterus, fertilization will not take place, no matter how many times a mare is served by a stallion. It is remarkable how many mares that could be made producers with the capsule system are bred every few weeks with the natural service without any results.

Mare owners are asking for capsule service, as a rule. There are, however, a few individuals who are opposed to any progressive method. These men have usually been misinformed, often by the owner

Anti-Hog Cholera Serum

We wish to announce that the Ames Vaccine Company has moved its office and plant from Ames to Fort Dodge, Iowa, where we are building a plant which, when completed, will be the most sanitary and up-to-date plant of its kind in existence.

We will keep our serum up to the highest standard of potency, which reputation it has earned in the past. We do not buy sick hogs on the market, which are frequently affected with mixed infections and different stages of diseases from which to make our serum.

We buy only healthy pigs that we know are susceptible, these pigs are inoculated with a virulent strain of cholera virus that has been bred up for a number of years and is known to be free from mixed infections.

We do not sell to farmers, *jobbers* or *druggists*. We sell *only* to veterinarians.

AMES VACCINE COMPANY

FORT DODGE, IOWA

of a scrub stallion who is afraid that the capsule system will either force him to retire from the breeding business or buy a better horse. There are also a few men owning good stallions who do not wish to learn modern methods, and who oppose the capsule system.

Yet it is remarkable how this method of horse breeding has grown during the last few years. Nearly every county where horses are bred has one or more successful capsule breeders. Mare owners can bring about a reduction of the service fees and get a better per cent of foals and encourage the use of better sires by advocating the modern method of horse breeding with the capsule system.

Any practical man will understand the importance of the advantages already named, yet the best thing of all about the capsule system is that disease germs are not transmitted from one mare to the other, as they often are through the act of copulation where only natural services are made. Where several mares are present to be bred a clean, healthy mare can be selected on which to make the natural service. The operator can wash his hands so as not to carry any infection to the next mare. But when a stallion serves a diseased mare, he can transmit those germs to clean, healthy mares for several days after such service. The penis cannot be washed clean enough to remove these germs. In fact, it is an impossibility to wash the penis satisfactorily. It will only be a few years until the capsule method of breeding will be used generally with all good stallions and jacks. It has come to stay. If mare owners will make inquiry of the

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owners of good stallions concerning this, it can be hastened. The improvement in horse breeding must be started as a rule, by the mare owners demanding it.—*Animal Husbandry.*

WITCH-HAZEL OINTMENT

Tinct. hamamelis.....drs. 12
Lanoleum.....drs. 6
Petrolatum.....ozs. 16

Mix. Lanoleum is here used in place of the copyrighted term lanolin.—*Med. Standard.*

ACTIVITIES OF STABLE FLY MAY BE CONTROLLED BY PROPER CARE OF STRAW STACKS

This tormentor of livestock and carrier of diseases caused $25,000 damage in northern Texas last year and is particularly harmful throughout the United States during the late summer.

During the late summer of 1912, the actual death loss of livestock in northern Texas caused by the stable fly is conservatively estimated at $15,000 in *Farmer's Bulletin* No. 540, recently issued by the Department of Agriculture. The loss due to the reduction in milk supply may reasonably be placed at $10,000 and other losses far surpass these two items.

This only includes a few counties in northern Texas where the fly was most abundant and not its devastations sustained in practically all parts of the United States. The Department's new bulletin is written by F. C. Bishopp, one of its entomological experts, and gives many practical hints regarding the control of this pest.

Besides literally worrying cattle, mules and horses to death and killing them by extracting their blood, the deadly fly also transmits disease from one animal to another. In tropical countries surra is undoubtedly transmitted thus. Fortunately this does not occur in the United States at present, but unless great care is exercised in importing stock it may be introduced at any time and the deadly fly given a chance to spread it. A related disease of cattle, horses, and sheep, and a malady of hogs and cats are also carried, at least in part, by this same insect.

Investigators also consider it to be an agent in transmitting glanders, and infectious anemia or swamp fever of horses is thought by some to be carried by this fly. A number of years ago it was found to act as a transmitter of a species of roundworm that infests cattle.

Animals weakened by loss of blood are more prone to contract other diseases. "Tick fever" in an acute form often attacks livestock that has become less energetic in fighting with stable flies. The joints of both horses and cattle sometimes become so swollen from standing in water where they sought protection from flies, that they can hardly walk.

Even man may be inoculated with disease by this pest. Septicemia (blood-poisoning) is considered to be carried by it and demonstrations of famous physicians have pointed to the possibility of the transmission of infantile paralysis in the same manner. Thus it will be seen that the transmission of a formidable array of diseases is chargeable to the stable fly.

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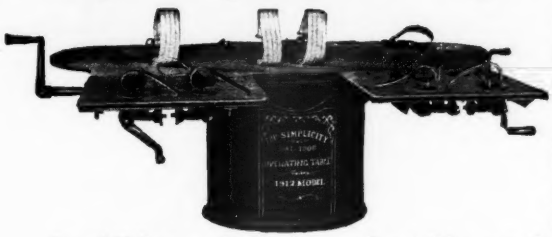

Has all movements necessary for all surgical operations.
The base rests on circular bearings enabling the operator to rotate the field of operation to the light.

By shifting a single lever, the table can be inverted, placing the patient in position for inferiorly located operations, such as Umbilical Hernia, Scrotal Hernia, etc.

FACTS FROM THOSE CONVINCED

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GENTLEMEN:—Since writing you Nov. 16, I have put on the "Simplicity Operating Table" an untrained three-year-old mare to operate for ventral hernia, and everything went off well. Have also operated on a case of scirrhous cord in an eight-year-old horse lately in company with a veterinarian from England. who was on a visit to Ireland, and this trial of the table was also successful.

A few days ago I placed a six-year-old hunter on the table to get a radiograph taken of one of his legs. The glass plate was put under the leg for twenty minutes at a time, but was not damaged, and a splendid photo was taken.

The Improved Operating Hood purchased with the table is of great value, and the only thing I regret is that I was not aware of its advantages years ago.

The Canine Table has proved one of the most useful articles I have ever invested in, and is greatly admired by both dog owners and practitioners.

So now, I have pleasure in stating that Dr. Conkey's visit here has proven of marked value to me, and also that no Veterinary Infirmary can be considered complete without your tables. You have my permission to refer to me as regards the value and utility of the tables, both equine and canine.

Yours very faithfully,
E. WALLIS HOARE, F.R.C.V.S.

Cork, Ireland, Nov. 30, 1912.

DR. L. L. CONKEY, President,
Veterinary Specialty Mfg. Co., Grand Rapids, Mich.

DEAR DOCTOR:—It is my pleasure to recommend your "Simplicity Operating Table" to each and every member of the Veterinary Profession as the best asset a veterinarian can have. It simplifies surgery and reduces the dangers of accident, both to the patient and operator, to the minimum and increases the possibilities for asepsis 100 per cent. I am a user of the "Simplicity" table and know what I have stated are facts.

Very respectfully yours,
DR. N. D. BACKUS.

Elyria, Ohio, Dec. 11, 1912.

PROFESSOR R. R. DYKSTRA, of Manhattan, Kansas, writes:

"I have used the Simplicity Equine Operating Table daily since its installation in the Hospital of the Kansas State Agricultural College and find that, for ease of handling patients, thoroughness of control, and accessibility of all operative areas, it is unusually efficient.

"You will hear nothing but praise for the 1912 Simplicity Equine Operating Table."

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HOLLAND, MICH.

The stable fly is one of the most widely distributed of insects, being common in both tropical and temperate regions where domestic animals are reared. In regions bordering on the Tropics the flies are of importance throughout the entire year. In the extreme southern part of our country there is no month during the year in which flies are not annoying to horses and cattle. In the northern states, the fly is particularly injurious and abundant in the late summer and fall.

Investigations made during the 1912 outbreak showed clearly that the vast majority of stable flies bred in straw stacks. It was also shown that while the fly breeds in pure horse manure, it favors a mixture of this substance with straw.

The fly was found to be breeding in much greater abundance in oat straw than in wheat straw. Rice straw was also found to furnish suitable breeding conditions and there is little doubt that barley and rye also serve as food for the immature stages of the insect. The development of this insect is somewhat slower than that of the house fly and it is therefore quite necessary that the eggs be deposited in rather large quantities of material for it to breed out successfully.

How to control this pest.—As with most insects, the destruction of this one when it is actually doing the injury is what is most desired by those concerned. With this species, as with many others, this is the most difficult time to accomplish the desired result.

During the recent outbreak in Texas many different substances were tried with a view of repelling the flies from livestock. Although some materials gave a measure of protection for a time, none had a lasting effect. In addition to the temporary

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Have used it in horses and cured them.
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Have used your Hernia Ointment several times and always with success. In two cases of Umbilical Hernia in yearling and two-year-old colts, the enlargement being as large as a man's fist, the cure was complete.
D. R. MOYSEY, D. V. D. (Chicago)
Nth. Yakima, Wash.

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J. R. STORRY, V. S., Stouffville, Canada.

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value of these substances, injury was sometimes produced by their application. Many malodorous mixtures, particularly of an oily nature, have some value, but in preparing these care should be taken that they are not made too strong, particularly when animals are being worked in the hot sun. If they are made too strong they are likely to cause overheating of the animal and produce shedding of the hair.

A mixture of fish oil (1 gallon), oil of pine tar (2 ounces), oil of pennyroyal (2 ounces), and kerosene (1-2 pint) was found to be very effective in keeping the flies off livestock when applied lightly, but thoroughly, to the portions of animals not covered with blankets or nets.

Proper care of straw stacks the most important step.—Since straw stacks have been found to be the principal breeding places of this insect in the grain belt, the proper care of the straw is by far the most important step in control. The straw should be stacked more carefully than is ordinarily done, by making the sides of the stack nearly vertical and rounding it up well on top in order the better to shed the rain.

All straw not required for winter feed should be disposed of immediately by burning or by scattering it over the land soon after threshing and subsequently plowing it under, or by burning the stacks. The plowing under of the straw is the most advisable method of procedure, as by this practice large amounts of humus are added to the soil.

All stacks not consumed by stock during the winter should be promptly disposed of in the early spring. This may be accomplished in the same way as has been suggested for the fall.

Filling aseptic glass syringes with the finished antitoxin

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ONLY BY THE USE OF ANTITETANIC SERUM

The usual antiseptic precautions are insufficient to prevent infection by tetanus bacilli, the spores of which resist all ordinary antisepsis. Antitetanic serum used *before* the attack is 100% perfect as a preventive; used during the attack it is often a valuable treatment.

Our tetanus antitoxin is of the highest quality yet attained by any manufacturers, it is freed from *all* waste and accurately standardized. Use it in all cases of "suspicious" wounds, it is inexpensive insurance against loss from tetanus.

908	**Tetanus Antitoxin,** 750 units in syringe containers	$0.75
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Used on the day of infection or within 48 hours thereafter 750 units is a safe prophylactic dose.

THE ABBOTT ALKALOIDAL COMPANY
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Heavy rainfall on freshly threshed straw, produced the unusual outbreak of last year by rendering the straw largely unfit for food for livestock and thus offering breeding places for flies. In such instances their immediate destruction by burning or scattering is necessary to relieve the condition. The work should be done thoroughly, and when the stacks are scattered all the straw should be completely exposed to the influence of the elements.

It is best to plow under the scattered straw soon after it has become well dried out. In sections of the country where headers instead of binders are used, the straw is much more easily disposed of. The general adoption of the field threshers would completely solve the question of the straw stack. It is reported that this machine reduces the expense of harvesting from 14 to 2 cents per acre and the straw is left standing in the field. The chaff is scattered over the ground and the entire refuse turned under at plowing time.

The use of poisons to destroy immature flies is neither practical nor advisable.

Manure piles dangerous breeding places.—Although straw is the principal breeding place for the stable fly in the grain belt, thousands of them develop in manure piles. The house fly and horn fly also breed extensively here and therefore the greatest care should be used in dealing with this animal refuse.

Manure should be hauled out and scattered at regular intervals and any accumulations of straw or hay, especially adjacent to stables, should be disposed of. Stable manure being usually in close proximity to human habitations, the flies from it have freer access to man to disseminate human diseases.

A photograph and description of an interesting fly trap to capture adult flies is included in the Department of Agriculture's Bulletin.—*Office of Information U. S. Dept. of Agriculture.*

HOW DID IT HAPPEN?

A farmer makes the following inquiry: Up to two weeks ago there was no illness among my hogs but now they have cholera. I can't figure out where they got it. The pigpens are built of stone, located on a considerable raise of land, which is underlaid with sand and gravel, with a decided fall to a river bottom pasture. Each one of these pens has from two to six acres of pasture. In each of the pens I arranged for a wallow which is supplied with running water, the source of which is from springs along a bluff above these pens. There is a continuous flow of fresh water through the entire

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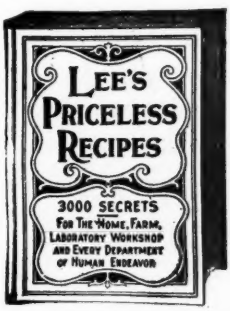

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pasture. None of the men who care for these pigs have ever visited a ranch where pigs were kept. They have been fed from the kitchen waste, alfalfa green and dry, and an occasional bran ration."

These hogs have evidently been given more than ordinary care, but one important source of infection has been overlooked. The kitchen garbage may contain the pork rinds from infected hogs, and this is probably how the hogs became infected. Less than one-half of the meat consumed in this country is subject to any sort of competent inspection and it is the practice among hog raisers to rush the hogs off to market as soon as cholera appears among them. You must cook the garbage or take chances with hog cholera.—GEO. H. GLOVER in *News Notes* published by the Colorado Agricultural College.

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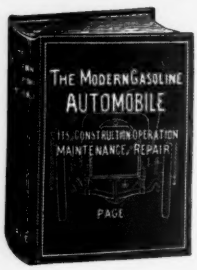

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Farmers therefore need not hesitate to breed their mares to a jack for fear that the mare will become "saturated" or "impregnated" so that subsequent progeny by a stallion will show the characteristics of the jack. Although the Bureau has made no experiments on this subject with other animals it is very doubtful whether telegony occurs in any species of animals. In animals which give birth to more than one offspring at a time, it is possible for the characteristics of more than one male to appear in different individuals. For example, if a Berkshire sow is bred to a Duroc-Jersey boar and Chester White boar in the same period of heat, some of the resulting pigs will probably be red in color and others white.

Only one spermatozoon is required to fertilize one ovum. Where several ova are given off at each period of heat, as is the case with sows, it is possible for a sow to give birth to such a litter, when bred in this way. The same is true of bitches, cats and similar animals.

Three cases have been noted this year where mares have foaled twins, one a horse foal and the other a mule. The mares were bred to a stallion and a jack during the same period of heat.

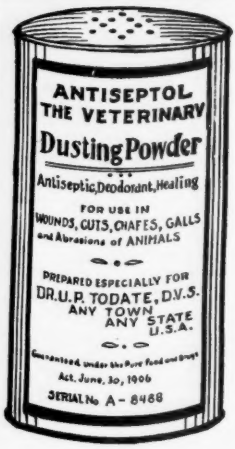
Supposed cases of telegony will usually be found to be due to promiscuous service or to a reversion to some remote ancestor.

SKIN DISEASE

A long and extensive (and expensive) experience with skin disease in dogs has taught the writer that the following is the best general treatment for the same.

1. Avoid keeping a large number of dogs together in a small space and with limited exercise.
2. Groom dogs frequently with brush and comb.
3. Separate any dog showing symptoms of skin disease completely away from all others.
4. Feed dogs threatened with skin disease or already having it liberally with minced raw beef.
5. Avoid starchy foods altogether. These will not cause actual mange, which is an infectious disease and can only be got by direct infection from other animals, but will put the dog in such poor condition, causing eczema and other inflammations of the skin, making them a ready subject for mange infection.
6. Keep the bowels well opened by a good laxative. We like for this compound licorice powder or compound rhubarb pills, and occasionally Epsom salt.
7. Give internally a pill of reduced iron, but give only once a day, and be sure that laxatives mentioned in rule 6 are also given, and miss the iron one day in every three or four days.
8. The best external treatment is to dip your dog in a solution in water of potassa sulphuratta or "liver of sulphur."

This is safe, non-poisonous and very efficacious in everything but follicular mange. The strength of the solution may be anything from an ounce in a pail of water to a saturate solution, which means as much as will dissolve in the water, and can be kept in a tub indefinitely and made stronger by the addition of more potassa sulphuratta. Dip the dog in it every three days. Do not dry him afterward or let him roll, but let the solution dry on him. Of course, in the case of long-haired dogs the hair must be cut short.—*Kennel and Bench.*



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